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A SURVEY OF PHYSICAL FACILITIES AT WISCONSIN STATE COLLEGES AND UNIVERSITY OF WISCONSIN FALL 1958

CLASSROOMS AND LABORATORIES

Prepared for The Coordinating Committee
for Higher Education

by the Joint Staff

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A SURVEY OF PHYSICAL FACILITIES AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN (MADISON AND MILWAUKEE)

Fall Semester, 1958

A Joint Staff Study
Directed by
Frederick E. Schwehr

Preface

The Joint Staff wishes to express its appreciation for the wholehearted cooperation received from all the Wisconsin State Colleges and the University of Wisconsin in filling out the necessary forms to supply the raw data for the analyses found in this physical facilities survey, based on the fall semester, 1958.

This survey will be presented in several parts and will encompass all the facets of assignable and nonassignable areas. In addition, the latter segments will include comparisons with normative data, conclusions, recommendations and a quality study of the buildings at each state institution of higher education.

Part I of this study includes an introduction to the total survey, enrollment trends and the utilization of classrooms and laboratories at the Wisconsin State Colleges and the University of Wisconsin--Madison and Milwaukee campuses.

GUIDING PRINCIPLES OF THE 1958 PHYSICAL FACILITIES SURVEY

As the nations' college and university enrollments soar in this decade so will the need for expanded facilities and increased teaching resources. It is imperative that institutions of higher education, in order to attain their educational objectives, base present and future planning and management on reliable data. One important type of data can be obtained by carefully studying the use of existing physical facilities of an institution.

The term "Physical Facilities", when related to an institution of higher education, refers to buildings, land and equipment. This study deals only with buildings. It is a statistical analysis of the amount and kind of existing space, the degree of utilization and quality of the structures.

Definitions

In order to acquaint the reader with the different terms used in describing the various kinds of space the following definitions are included:

1. Cubage: The cubic content (cube or cubage) of a building is the actual cubic space enclosed within the outer surface of the outside or enclosing walls and contained between the average outer surfaces of the roof and 6" below the finished surfaces of the lowest floors. The definition of cubage requires the cube of dormers, penthouses, vaults, pits, enclosed porches and other enclosed appendages to be included as a part of the cube of the building. It does not include the cube of courts or light shafts, open at the top, or the cube of outside steps, cornices, parapets, or open porches or loggias.

2. Gross Square Feet: The gross floor area of a building is the sum of the areas at each floor level included within the

principal outside faces of exterior walls, neglecting minor architectural set-backs and projections. Included are all stories or areas which have floor surfaces with clear standing head room (6'6" headroom minimum), regardless of their use. Excluded are all unroofed areas and unenclosed roofed spaces.

3. Net Square Feet: The net square feet of floor area includes all floor space in the interior of a building excluding structural elements such as walls and columns. This includes classrooms, laboratories, offices, etc., as well as such public spaces as corridors, toilet rooms, elevator spaces and stairways. Also included are mechanical equipment rooms, accessible pipe spaces, and floored areas in attics and basements (6'6" headroom minimum). Generally this is any area which can be walked on.

4. Assignable Floor Space: The assignable area is the sum of the floor areas of the individual rooms assignable to the agencies housed in the building. Excluded are the floor areas devoted to activities such as the circulation of general traffic within the building, mechanical equipment rooms, accessible pipe spaces, janitorial closets, and public toilets. This figure also excludes the floor area of a building's structural elements (except as they exist to a negligible degree within the rooms).

5. Non-Assignable Floor Space: All areas which cannot be assigned to a specific agency.

   a. Circulatory Space. Includes corridors, lobbies, hallways and stairways, elevators and vestibules. Waiting rooms which are walled off from the hallway and are used in conjunction with specific offices are included under office space. Areas used as waiting rooms which are a part of the corridor or vestibule are included in the circulatory space.

   b. Rest Rooms. All public rest rooms are included. Faculty and student lounges are included in auxiliary enterprises category. Rest rooms used in conjunction with individual offices are included in the office space as part of the area for the particular office it serves.

   c. Custodial and Service Space. Included are janitorial closets, furnace and boiler rooms, (except in main heating plant), pipe space areas, and mechanical equipment rooms. The central heating plant is listed as a physical plant space and is not shown in this catagory.

d. Non-Usable Space. Included are such areas as attics and unfinished basements even though such space may sometimes be used for dead storage. Space which has been condemned and is not expected to be returned to active use is included.

6. Laboratory. Instructional rooms equipped for a specific purpose such as chemistry experiments, food preparation and service in home economics, shop work in industrial arts, painting, music practice, etc. Adjoining space such as balance rooms, storerooms, supply rooms, dark rooms or projection rooms are included as part of the laboratory unless such rooms serve two or more laboratories.

7. Classrooms. Any instructional room used chiefly for lectures, recitation, and seminar type of class meetings.

8. Student Stations. Number of seats or laboratory desks or other facilities that may be occupied by a student during an instructional period. The total number of seats or facilities constitutes the student station capacity of a room.

9. Weekly Room Period Use. The weekly use of a room for a full semester consists of the total number of class periods the room is used per week. (A normal class period is considered as 50 minutes.)

Hazards of Comparisons

Institutions of higher education are often criticized for the inefficient use of existing structural facilities. Studies have been quoted as to the utilization rate of instructional areas in the colleges and universities. In many instances terms and utilization figures have appeared without definition. Data presented in such a manner may be misleading and are often meaningless. Without a knowledge of the meaning or derivation of these figures it is extremely difficult, if not impossible, to compare institutions. In addition, little mention is made of the necessity for correlating physical facility data with institutional objectives, curricula requirements, enrollment trends, quality of existing facilities, etc. It should be remembered that the findings of a physical facilities survey cannot be considered as the only criterion to be used in judging the space needs of a particular curriculum or of a specific institution.

Hard and fast standards of utilization and space requirements which may be applied to all institutions across the nation do not exist. The physical facilities of one institution cannot be compared with another without examining the curricula and institutional aims. Each institution must be examined individually. This is exemplified in Wisconsin by comparing Stout and Eau Claire State Colleges. Eau Claire State College primarily offers a liberal arts curricula whereas Stout State College specializes in teacher education in the specific fields of Home Economics, Industrial and Vocational Education. Clearly, these schools cannot be compared in terms of institutional objectives. This in itself will affect the needs in terms of size and type of physical facilities required. In addition, a look at the University of Wisconsin indicates that it is composed of many different colleges each with specific aims and, in many instances, different requirements of physical facilities. Further, the University graduate program requires a large number of research rooms. This type of program requires small groups of students to work in seminar type rooms. This is in direct contrast to the lower division of undergraduate students who often are instructed in large general groups in a small number of rooms. It is evident that broad generalizations on utilization standards cannot be applied.

Mechanics of Securing data

The 1958 study represents the second compilation of physical facility data gathered at the Public Institutions of Higher Education in Wisconsin. It is a survey of assignable and non-assignable areas at each institution and will be presented in four sections. The forms and instruction sheets were developed by the Joint Staff and distributed to each of the state colleges and to the University for completion. This second study represents considerable refinement of forms and definitions in order to secure a higher degree of accuracy in accounting for the total building space at each institution. For example, in addition to the forms for separate classification, each institution was requested to supply the Joint Staff a set of line drawings of their buildings, a building data sheet itemizing each room and its square feet of area in all buildings, and a summary sheet of all assignable and non-assignable area by building.

The 1958 study describes various methods which have been employed by the state institutions to increase the utilization of their existing facilities. A close examination of the associated factors - such as, the average number of student stations per room, average room periods used per week per room, average student stations occupied per week per room, the square feet per student station and the per cent of student stations utilized - concerning utilization emphasizes the need for a thorough knowledge of these factors when planning and scheduling for optimum utilization. The specific needs of the curricula offered at each institution are more meaningful in planning and utilization of physical facilities than are broad generalizations often noted in the popular press. Areas and facilities must be provided in the specific fields of endeavor allowing the student a choice in selection of educational opportunities.

Comparisons with other Studies

The detailed comparison of Wisconsin's institutions with other studies will be made in Part III. A brief comparison is included here to illustrate how the Wisconsin institutions rank in relationship to other states.

In *a Restudy of the Needs of California in Higher Education*, 1953, it was recommended that classrooms be used an average of 36.0 periods per week with 67% of the student stations utilized. The actual use in California was an average of 27.0 room periods with 51.7% student stations utilized for all institutions. The recommended standard for laboratories was an average of 24.0 room periods per week with 80% of the student stations in use. The institutions actually used the laboratories an average of 18.8 room periods and utilized the student stations 65.2%.

In the *Manual for Studies of Space Utilization In Colleges and Universities*, 1957, by John Dale Russell and James Doi, 90 of the nations' institutions used their classrooms an average of 20.4 room periods per week with 53.3% of the student stations utilized. The laboratories in 88 institutions were used an average of 18.0 room periods per week. The per cent of student station utilization for 82 institutions was 63%.

The Coordinating Committee for Higher Education in Wisconsin established classroom and laboratory standards in the 1956 physical facilities study. It was recommended that classrooms be used an average of 30 room periods per week with 67% student station utilization. For laboratories the standard was established at 24 room periods per week with 80% student stations utilized.

According to the 1958 study, Wisconsin's all-institutional utilization was an average of 29.0 room periods used per week and 56.5% student stations utilized for classrooms. The laboratories were used an average of 24.6 room periods per week with 65.9% student station utilization.

The Joint Staff would appreciate any comments or criticisms which may be of value in the development of future studies.

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PART III SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

This section summarizes data found in Parts I and II. Comparisons with normative data from other institutions will be made before recommendations and conclusions are made.

PART IV QUALITY STUDY

This is a study concerned with the quality of physical facilities by functional area at each institution.

PART I

CLASSROOMS AND LABORATORIES

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INTRODUCTION

The Purpose of the Study

The first physical facilities survey of Wisconsin's public institutions of higher education was published in April, 1958. This study was based on the fall semester 1956-1957. From this study a great deal of information was obtained which aided each institution in determining the present utilization of existing facilities, in providing factual data pertinent to obtaining better utilization, and in recognizing the institutional strengths and weaknesses in building utilization. In addition, the study provided factual background data for future plant expansion based on need and provided information which aided in the recommendations of standards for allocation of space to the various functional areas. Finally, the study was used as one of the guides in the development of an integrated building priority list for the Wisconsin State Colleges and the University of Wisconsin.

In order to prepare for the 1961-63 building needs and to keep abreast of the rapidly changing educational scene a second physical facilities survey has been conducted.

The Physical Facilities Survey

Since the term "physical facilities survey" will be used many times in this study and in order to provide a basis of uniform understanding, it is imperative that a working definition be established. For purposes of this study a physical facilities survey is defined as: an objective method of analyzing the size, capacity, occupancy, utilization and quality of each room in every building which is used by an educational institution in each of the functional areas of operation.

The physical facilities survey must not be considered as the final answer to all problems confronting institutions of higher education as they attempt to meet tidal wave enrollment trends, even so far as building needs are concerned. Such a study must be considered as a guide which, when correlated with other information, will give an objective approach to the solution of space problems. Some other items which must be considered along with the physical facilities data are: the type of programs offered, as well as those planned for the future, institutional objectives, scheduling, availability of funds, land access, past and present enrollment trends, and the utilization of college teaching resources.

Included in this study are all buildings except: housing, farms, medical buildings and hospitals, and experimental stations. Student unions at the University of Wisconsin were in operation in 1958 and are included in this study. At the state colleges the nine student unions were not opened until September, 1959, although three were used to a limited degree during the summer session. Considerable remodeling of buildings at the various institutions has taken place since the 1956 study resulting in a different functional use of many rooms.

In order to provide more usable data the definitions used in the previous study were appreciably refined for use in the 1958 survey. This refinement necessitated revision of several forms used in compiling the raw data. Areas which have been most noticeably affected are:

1. The category of Special Purpose Rooms, used in the 1956 study, has been deleted. Many of these rooms are now classified as either Teaching Laboratories or Other Active Instructional Areas.

2. Under Teaching Laboratories, the storage areas or supply rooms which served only one laboratory are chargeable to that laboratory. If the auxiliary room serves more than one laboratory it is assigned to the category of departmental use under Other Active Instructional Area.

3. Auxiliary rooms such as waiting rooms, office file and supply rooms, interconnecting corridors within a suite of offices, private toilets and clothes closets are included with the appropriate office.

4. Small libraries which do not employ at least a half-time librarian are excluded from the library form and are classified as departmental reading rooms and libraries under Other Instructional Area.

5. Auditoriums, theatres and assembly halls which had the seating area regularly assigned to scheduled class meetings are prorated between classroom and auditorium space.

6. If the physical education areas were used for intercollegiate athletics in addition to collegiate physical education activities, these areas are prorated between physical education and auxiliary enterprises.

7. When elementary or secondary laboratory school areas were used for college purposes these areas are divided according to the split function.

8. The category of auxiliary enterprises was enlarged to include clothing and book locker rooms, student and faculty lounges and student organization rooms.

9. In the 1958 study the following new categories were added:

    a. Other active instructional areas

    b. Other active non-instructional areas (other areas not specifically assigned to research, etc.)

    c. Inactive areas (remodeling and construction)

    d. Non-assignable area (circulatory, restrooms, custodial, attics and unfinished basements)

10. In addition, the following two forms were added to aid in accounting for each room in every building:

    a. Building data work sheet

    b. Summary of assignable and non-assignable area (this form has assured more complete reporting of existing facilities)

ENROLLMENT TRENDS

The 1958 study is based on the enrollments of the fall semester, 1958-59. During the two-year interim between the physical facility surveys there had been a very substantial increase in enrollments at the state colleges and the University of Wisconsin. Chart #1 indicates that the total state college enrollments have increased about 21 per cent over the two-year period. This enrollment increase ranges from 9 per cent at Stout to 34 per cent at Oshkosh.

The overall University enrollments had increased approximately 9 per cent. At Madison the student population expanded about 7 per cent and at Milwaukee this enrollment growth reached nearly 16 per cent. According to projected enrollments, by fall 1960, it is estimated that the state colleges will increase an additional 18 per cent[1] and the University an additional 11 per cent[2] overall.

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[1] Director, State College Office.

[2] Director of Institutional Studies, University of Wisconsin.

CHART 1

ENROLLMENTS FOR WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN

Fall 1956 and 1958

State Colleges[1]	1956	1958	% of Increase
Eau Claire	1332	1614	21.0
La Crosse	1497	1772	18.0
Oshkosh	1397	1874	34.0
Platteville	1039	1284	24.0
River Falls	1032	1285	25.0
Stevens Point	1377	1522	11.0
Stout	1159	1267	9.0
Superior	938	1168	25.0
Whitewater	1255	1569	25.0
Wis. Inst. Tech.	278	331	19.0
State College Total	11,304	13,686	21.0
University[2]			
Madison[3]	15,472	16,494	6.6
Milwaukee[4]	4,481	5,191	15.8
University Total	19,953	21,685	8.6
All Institution Total	31,257	35,371	13.1

[1] The Office of State College Board of Regents

[2] The Office of the Registrar, University of Wisconsin

[3] Day school enrollment exclusive of medical and nursing

[4] Day school enrollment exclusive of 711 full-time equivalent night students

CLASSROOMS

For the purpose of this study a classroom is defined as: an instructional room used mainly for lectures, recitation and seminar type class meetings. At the state colleges 248 rooms are used for this purpose. The University (Madison and Milwaukee) uses 332 rooms for classroom instruction. A small portion of some of these rooms are used for a function other than this type of activity. At the University of Wisconsin, Madison, some of these other functions are research, departmental reading rooms, extension and public service, etc. The state colleges split the classrooms primarily with office or laboratory school functions.

In analyzing the utilization of classrooms at the Wisconsin State Colleges and the University of Wisconsin the following four areas will be discussed: (1) the all-institutional classroom utilization, (2) an individual institutional analysis of classroom utilization by the number of students a room will accommodate, (3) the weekly room period use of 100 per cent classrooms during scheduled periods, and (4) a comparison of associated factors relative to utilization at each institution for the fall semesters 1956 and 1958.

All Institutional Classroom Utilization

The Assignable Square Feet of Classroom Space Per Student Enrolled (Chart #2). This area is defined as the total assignable square feet of floor space devoted to classroom purposes by each institution divided by the enrollment for the fall semester, 1958.

Since the 1956 study the assignable square feet of classroom space per student enrolled has decreased at all of the state colleges and the University of Wisconsin. As indicated in Chart #2 the state college average is 12.8 square feet per student enrolled. This is a decrease of approximately 3 square feet. The University average also decreased approximately the same amount per student. The number of square feet per student enrolled for classrooms ranges from 9.6 at the University of Wisconsin--Milwaukee to 22.6 square feet at Wisconsin Institute of Technology.[1]

The Number of Assignable Square Feet Per Student Station for Classrooms (Chart #3). The area per student station is defined as the number of seats or other facilities that may be occupied by a student divided into the total area of the room, disregarding the fact that the room may serve a split function.

The majority of institutions report a slight decrease in the area per student station from the fall semester 1956 to 1958. Wisconsin Institute of Technology shows the only noticeable increase in this area. This might be attributed to the conversion of part of one laboratory for classroom purposes. It is difficult to compare the area per student station in the 1956 and 1958 studies since there has been a shift in the functional use of some rooms to accommodate the sharp enrollment increase in certain areas. The state college average is 15.7 square feet per student station. At the University the average square feet per student station is 12.1. The all institutional average is 13.4 square feet.

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[1] On April 21, 1959, a bill effecting the merger of Wisconsin Institute of Technology and Platteville State College was signed by the Governor.

In October, 1959, the U. S. Office of Education released a preliminary report of the Inventory of College and University Physical Facilities.[1] This report is based on data received from 1,351 institutions which have 82 per cent of all higher education enrollments in the United States. The report indicates that the average square feet per student station is 17.2 square feet. In comparison Wisconsin's institutional average is approximately 3.8 feet less.

Average Room Periods Used Per Week Per Room For Classrooms (Chart #4). This represents the total number of periods of all classrooms used per week divided by the number of rooms. If a room serves more than one function the room period use is based on the classroom use only.

In the 1956 study, Part 2, it was recommended that classrooms be used an average of 30 periods per week per room. It is evident that all institutions have strived for betterment in this area. This is brought into sharper focus by the 1958 study which shows an all-institutional average room period use for classrooms of 29.0 periods per week per room. This represents about a 20 per cent increase over the fall semester, 1956. Significant was the increase in the room period use at the University of Wisconsin--Madison and Milwaukee--which surpassed the 1956 recommendation. In addition, the state college average room period use increased from 20.5 in 1956 to 24.8 in 1958.

Examples of methods employed by the various institutions to improve room period use will be discussed in the section devoted to the weekly room period use of 100 per cent classrooms. However, it should be noted that by applying a suggested method of scheduling, 75 minute periods, River Falls State College improved its room period use by 38 per cent.

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[1] William S. Fuller, "Status of the Inventory of College and University Physical Facilities, and Highlights from a Preliminary Report". U. S. Office of Education. October, 1959.

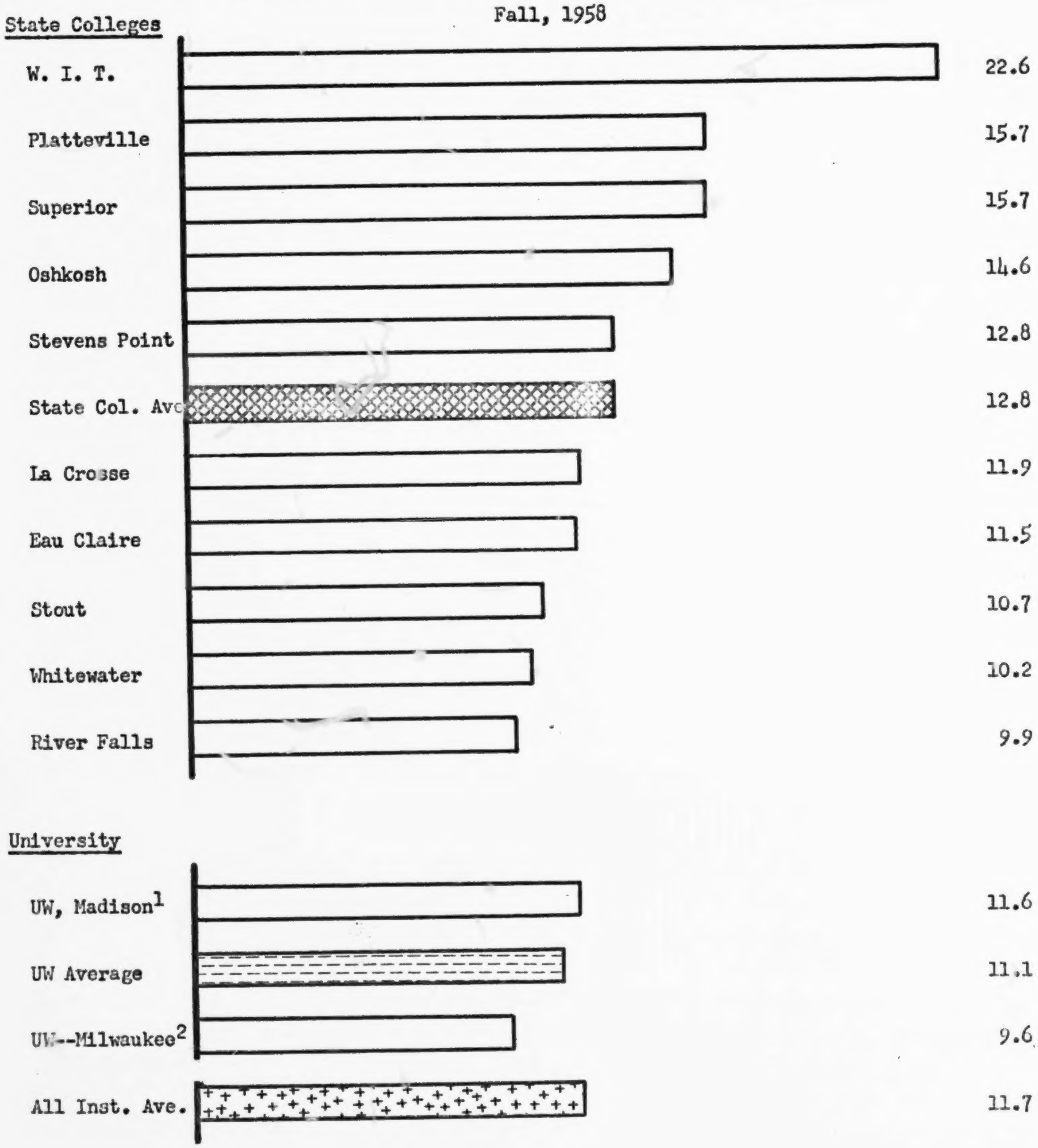
The Per Cent of Student Stations Utilized During the Regularly Scheduled Classes (Chart #5). The per cent of utilization is determined by dividing the number of student stations occupied during regularly scheduled classes by the number of student stations available.

In most institutions the per cent of student station utilization of regularly scheduled classrooms has improved during the past two years. Three institutions, Eau Claire, River Falls and Stevens Point, have surpassed the 1956 recommended standard of 67 per cent student station utilization. The remaining institutions are rapidly approaching the 1956 recommended standard as is indicated by Chart #5. In the section dealing with the comparison of associated factors affecting utilization a more infinite examination of student station utilization is made.

CHART 2

THE ASSIGNABLE SQUARE FEET OF CLASSROOM SPACE PER STUDENT ENROLLED AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN

Fall, 1958



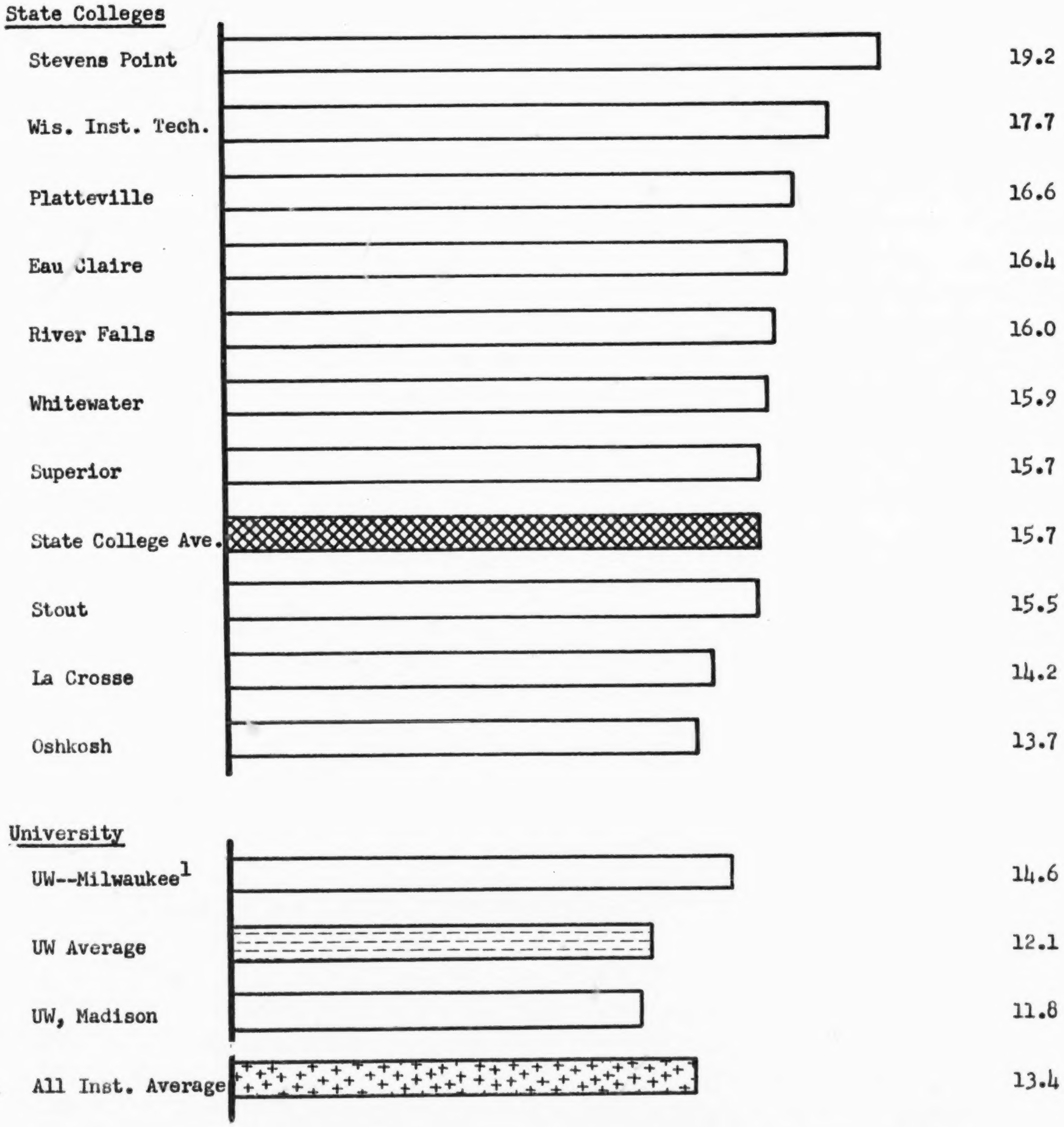
[1] Day time enrollment exclusive of medical and nursing.

[2] Day enrollment plus 711 full-time equivalent night students.

CHART 3

THE NUMBER OF ASSIGNABLE SQUARE FEET PER STUDENT STATION FOR CLASSROOMS AT WISCONSIN STATE COLLEGES AND UNIVERSITY OF WISCONSIN

Fall, 1958

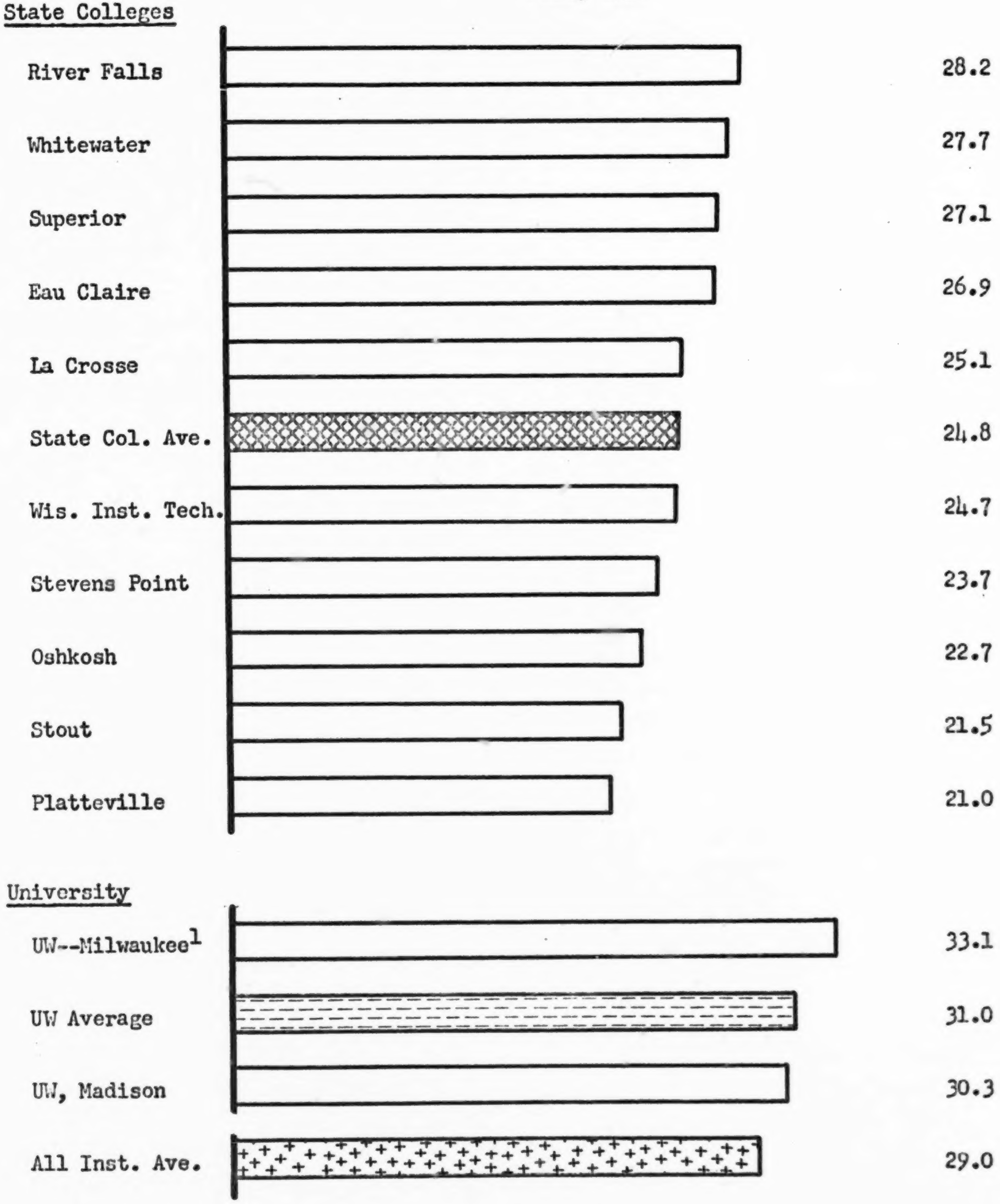


[1] Includes two classrooms rented from the Milwaukee Vocational School -- 992 square feet.

CHART 4

THE AVERAGE ROOM PERIODS USED PER WEEK PER ROOM FOR CLASSROOMS AT WISCONSIN STATE COLLEGES AND UNIVERSITY OF WISCONSIN

Fall, 1958



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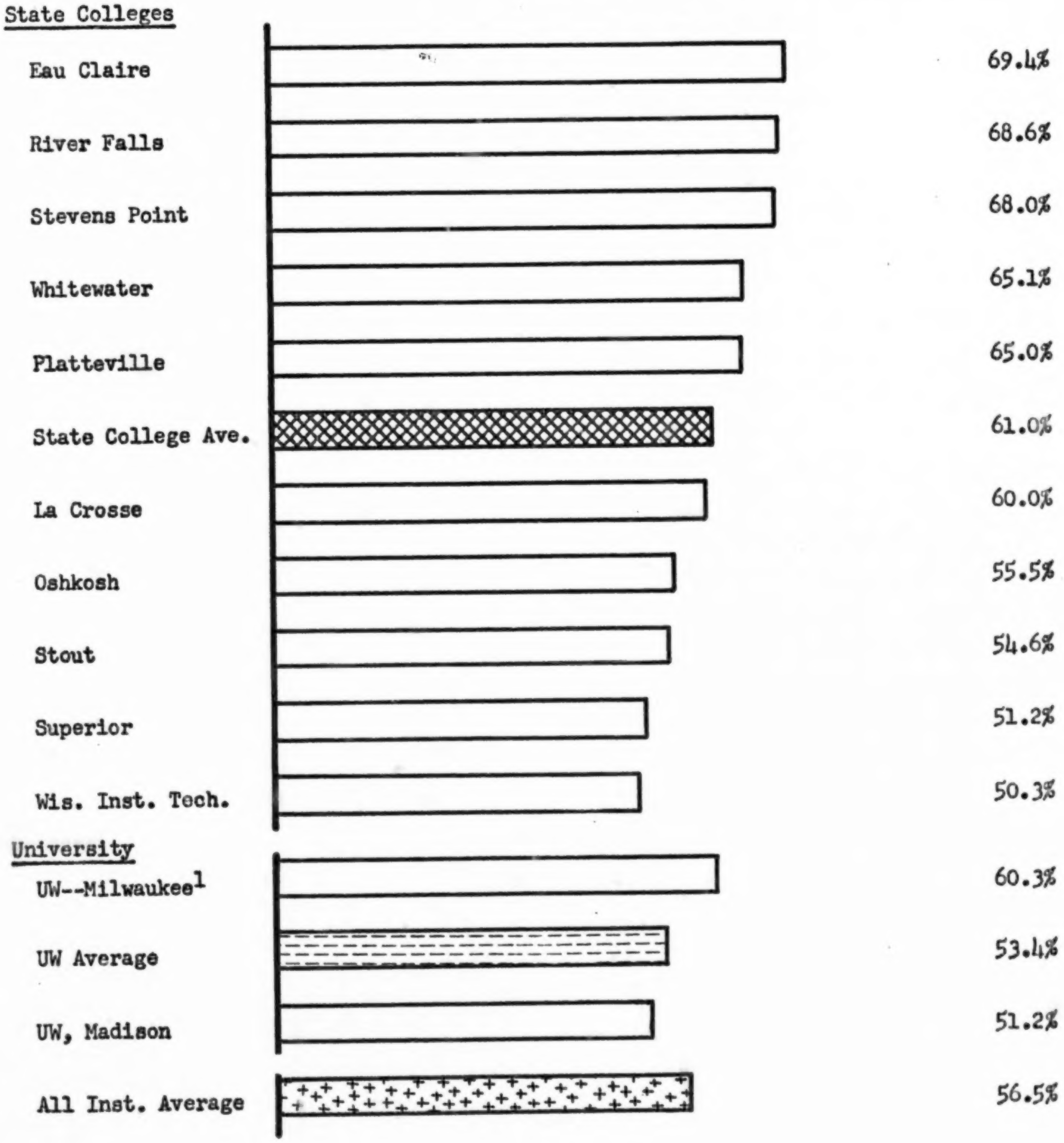
[1] Includes evening schedule.

CHART 5

PERCENT OF STUDENT STATION UTILIZATION FOR CLASSROOMS DURING SCHEDULED PERIODS AT WISCONSIN STATE COLLEGES AND UNIVERSITY

Fall, 1958



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[1] Includes evening use.

Institutional Analysis of Classroom Utilization by the Number of Students Accommodated per Room

The Weekly Utilization of Classrooms by Student Station Capacity (Charts #6-10). This group of charts readily explains why some institutions have a higher percentage of student station utilization than others. There is a direct relationship between the percentage of student stations utilized and the room capacity. As enrollments increase, utilization will also increase provided the same rooms are used to accommodate these additional students. However, if it becomes necessary to shift to larger capacity rooms or add more room periods, a decrease in utilization may result. A high rate of utilization can be obtained if the number of classrooms provided is related to the approved size of rooms by subject, institutional enrollment and type of activity.

At Wisconsin institutions all but two schools have better than 50 per cent of their classrooms in the 0-49 capacity group. However, 75 per cent of the schools utilized the 50-99 student station capacity rooms a greater average number of periods per week per room. Only three state colleges, representing six classrooms, have rooms in the 100 and over student station capacity. Eau Claire and Stevens Point have 90 per cent or more of their classrooms in the 0-49 category.

At the University of Wisconsin--Milwaukee the average room period use per week per room surpasses the recommended standard of 30 periods set in the 1956 study. In addition, this institution maintains a high percentage of student station utilization in all three categories. The

University of Wisconsin, Madison, exceeds the average room periods used per week per room standard in the 0-49 and 50-99 student station capacities and also approaches very closely the recommended standard for student station utilization in the 0-49 group.

At the majority of institutions in Wisconsin as the student station capacity of the room increases, the per cent of student station utilization decreases. This is also true of the average square feet per student station.

CHART 6

WEEKLY UTILIZATION OF CLASSROOMS BY STUDENT STATION CAPACITY AT WISCONSIN STATE COLLEGES AND UNIVERSITY

Fall 1958

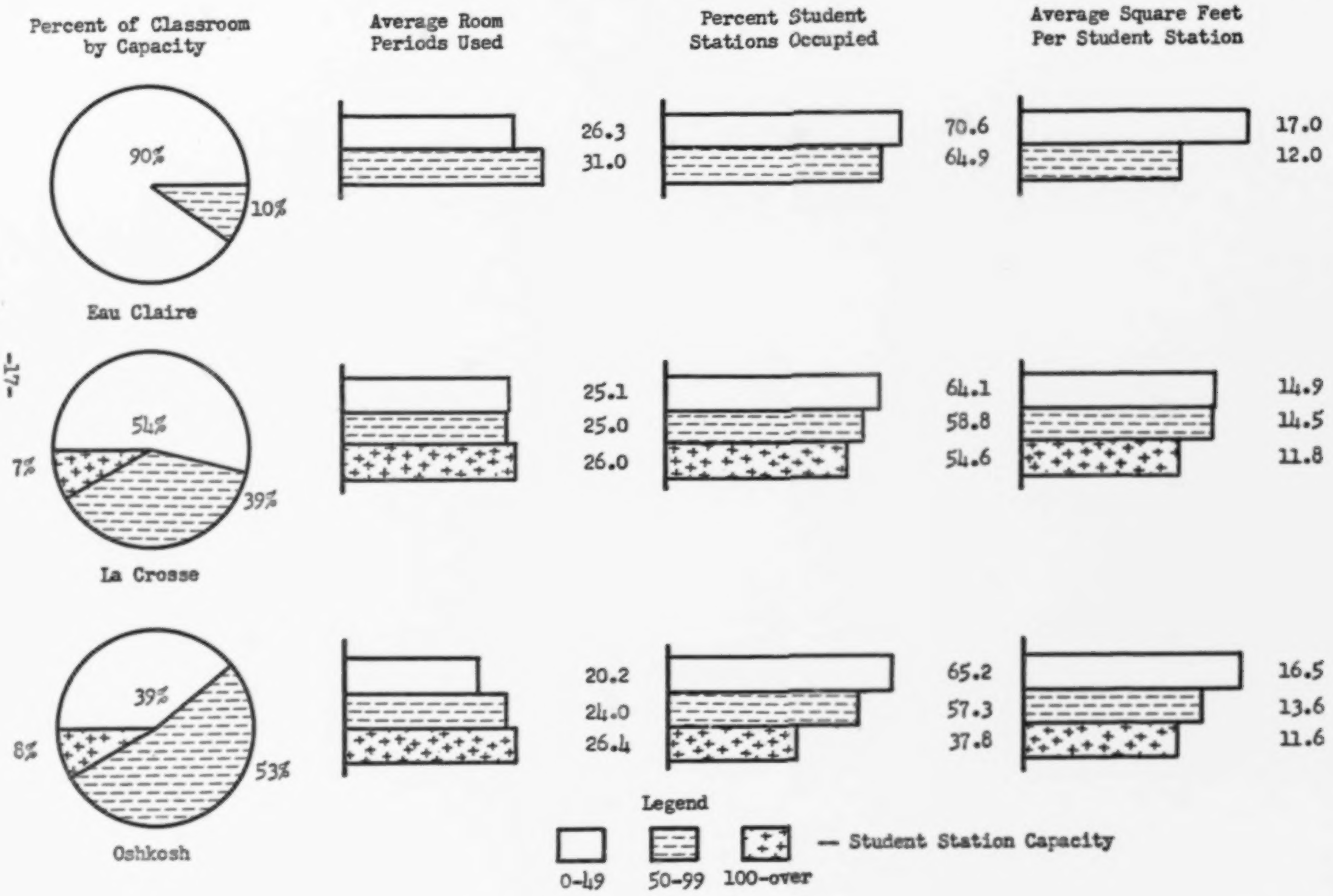
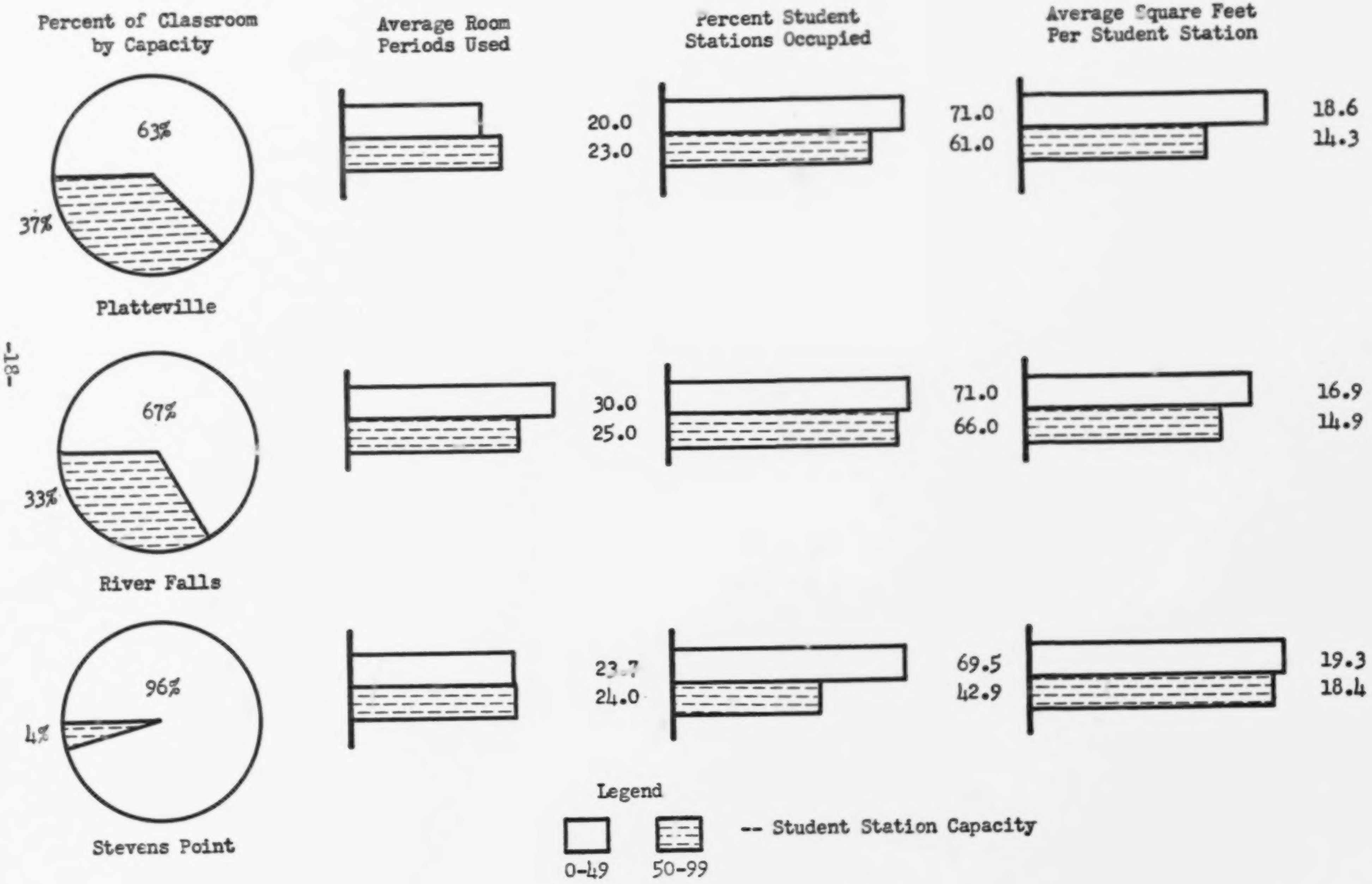


CHART 7

WEEKLY UTILIZATION OF CLASSROOMS BY STUDENT STATION CAPACITY AT WISCONSIN STATE COLLEGES AND UNIVERSITY

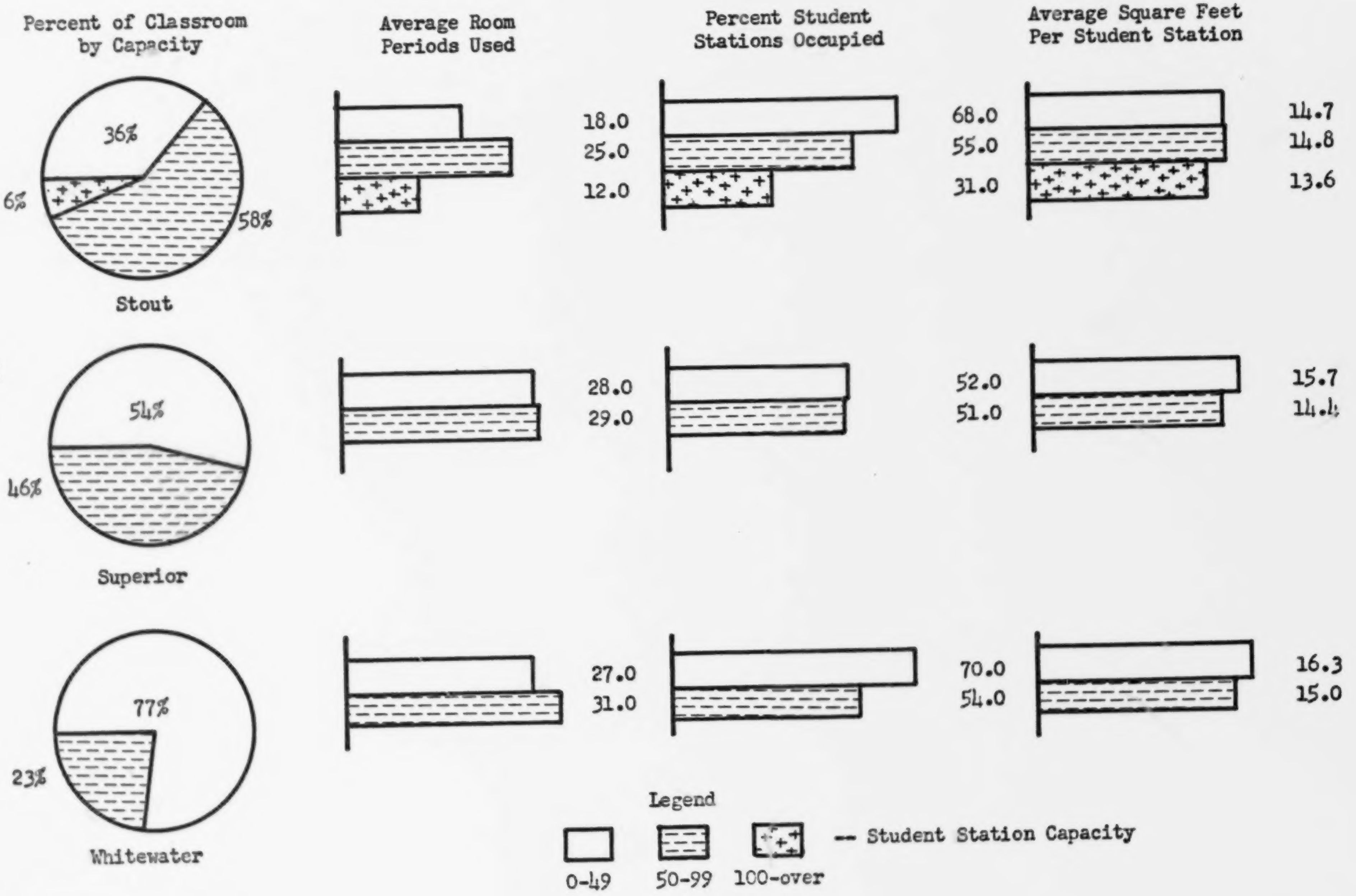
Fall 1958



C H A R T 8

WEEKLY UTILIZATION OF CLASSROOMS BY STUDENT STATION CAPACITY AT WISCONSIN STATE COLLEGES AND UNIVERSITY

Fall 1958



C H A R T 9

WEEKLY UTILIZATION OF CLASSROOMS BY STUDENT STATION CAPACITY AT WISCONSIN STATE COLLEGES AND UNIVERSITY

Fall 1958

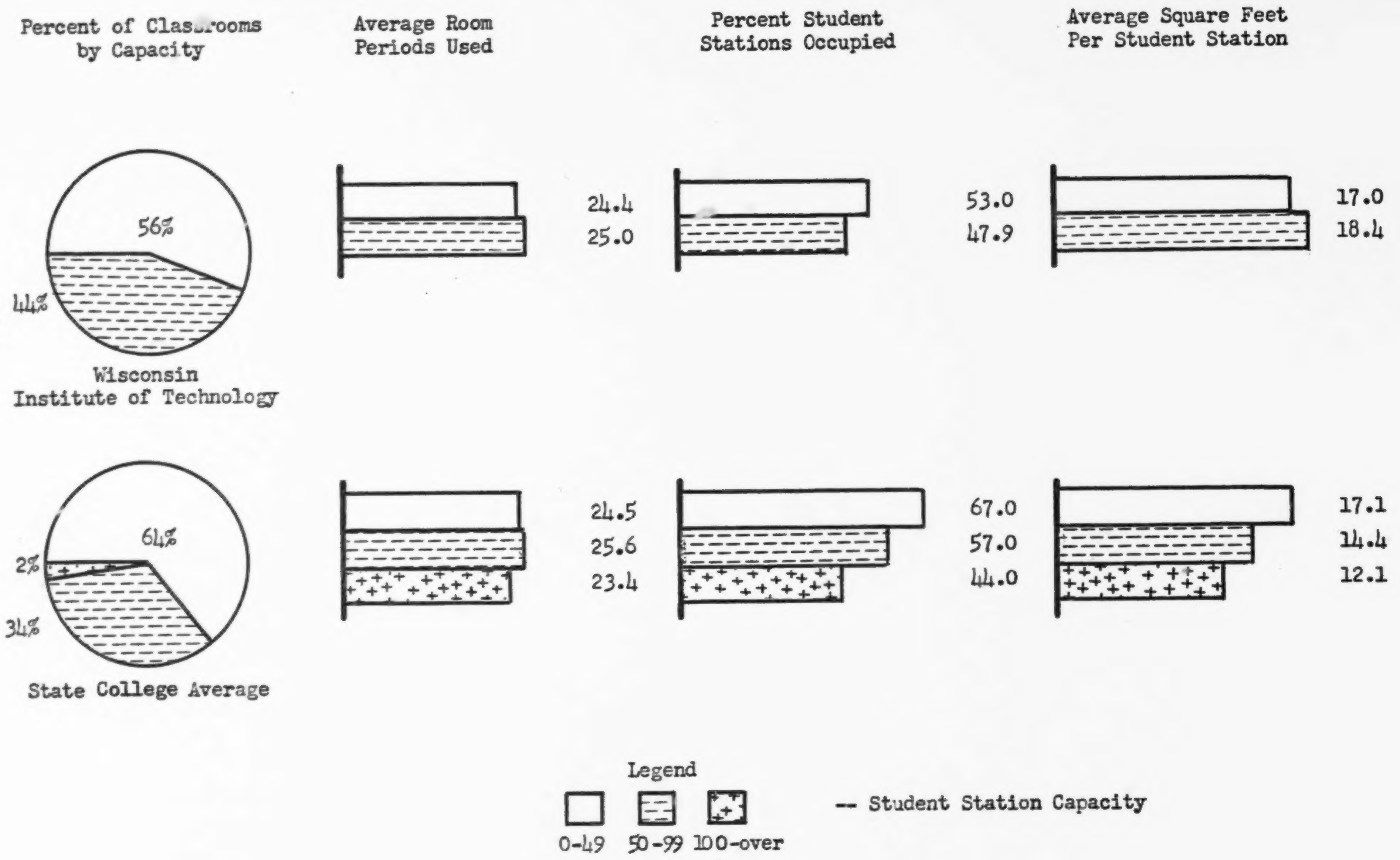
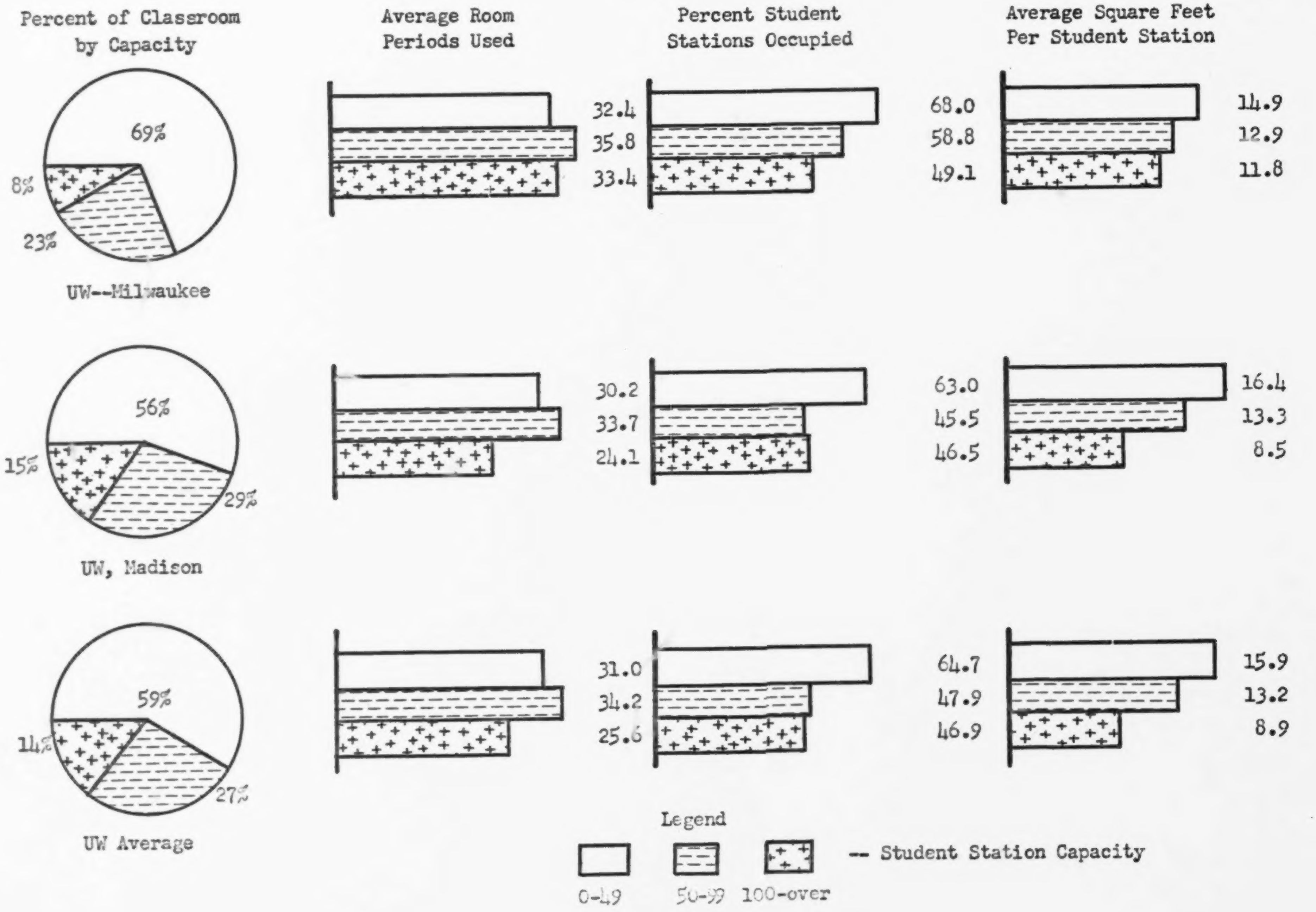


CHART 10

WEEKLY UTILIZATION OF CLASSROOMS BY STUDENT STATION CAPACITY AT WISCONSIN STATE COLLEGES AND UNIVERSITY

Fall 1958



Analysis of Room Period Distribution for Scheduled Periods

The Per Cent of Room Period Use of 100 Per Cent Classrooms (Charts #11-22). The 1956 study contained several suggested methods for improving the room period use of classrooms at Wisconsin institutions of higher learning. Among those methods were: use of 75 minute classes, scheduling more classes in the early morning, noon and late afternoon, and the use of evening and Saturday classes were possible.

An examination of charts numbered 11-22 shows a heavier use of the five-day schedule at all institutions. Only one school did not schedule classes through the noon hour. In addition, much heavier use was made of the early morning and late afternoon periods. Furthermore, a greater use of evening periods was made by several institutions. The use of Saturday classes to improve the room periods used was employed by 60 per cent of the state colleges as contrasted to 20 per cent in 1956. The University at both Madison and Milwaukee also scheduled Saturday classes in 1958.

As was mentioned previously, River Falls greatly improved its room period use by the scheduling of 75 minute class periods.

Another significant improvement was made by Superior State College. This institution increased the length of the day by one period, added Saturday classes, increased evening use and thereby increased the average room periods used per week per room by five periods. This becomes even more significant when the per cent of student stations occupied has decreased less than .5 per cent.

As is evidenced at La Crosse, it is possible to shorten the day by more evenly scheduling classes and still increase the average room period use.

The University of Wisconsin--Milwaukee enhanced its average room period use by adding early morning and Saturday classes. The evening schedule in 1958 reduced the previous two-period supper hour fade-out to one period and indicates a heavier room period use.

CHART 11

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS AT EAU CLAIRE STATE COLLEGE[1]

Fall, 1958

30 Classrooms

Period	M	T	W	TH	F	S
1	83	43	83	47	77	0
2	97	83	87	83	80	17
3	90	87	23	90	60	17
4	80	40	77	33	73	17
5	63	30	57	63	53	0
6	73	43	73	37	70	0
7	80	67	67	70	63	0
8	73	53	70	53	67	0
9	0	3	3	0	0	0
10	0	0	0	0	0	0
11	2	2	2	2	0	0
12	3	3	3	3	0	0
13	3	3	3	3	0	0

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[1] These represent rooms which are used for classroom purposes only. Rooms which served more than one function are excluded.

C H A R T 12

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS
AT LA CROSSE STATE COLLEGE

Fall, 1958

29 Classrooms

Period	M	T	W	TH	F	S
1	55	69	52	52	66	0
2	86	55	79	59	62	3
3	59	72	59	72	69	0
4	76	69	72	66	69	0
5	45	31	45	24	66	0
6	59	31	52	28	83	0
7	86	52	79	62	52	0
8	83	45	83	48	62	0
9	34	21	38	21	24	0
10	0	3	0	0	0	0

CHART 13

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS AT OSHKOSH STATE COLLEGE

Fall, 1958

35 Classrooms

Period	M	T	W	TH	F	S
1	49	66	17	66	57	3
2	34	89	6	91	74	17
3	83	3	71	3	86	17
4	60	23	57	23	63	17
5	63	23	60	23	63	0
6	3	14	11	14	3	0
7	69	69	14	69	34	0
8	89	91	17	91	31	0
9	69	23	31	23	66	0
10	17	17	11	14	14	0

CHART 14

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS AT PLATTEVILLE STATE COLLEGE

Fall, 1958

25 Classrooms

Period	M	T	W	TH	F	S
1	88	32	88	36	72	8
2	84	36	88	40	84	8
3	84	36	80	32	80	12
4	80	36	68	32	72	12
5	0	0	0	0	0	0
6	8	20	40	20	24	4
7	72	24	68	32	64	0
8	36	28	40	20	32	0
9	52	20	52	24	32	0
10	0	8	0	12	0	0

CHART 15

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS AT RIVER FALLS STATE COLLEGE

Fall, 1958

18 Classrooms

Period	M	T	W	TH	F	S
1	89	78	89	72	89	0
2	78	56	78	53	78	0
3	61	0	67	6	61	0
4	67	83	78	67	78	0
5	78	38	78	44	72	0
6	83	50	72	56	78	0
7	89	64	89	59	83	0
8	72	61	78	56	83	0
9	0	0	6	0	6	0
10	6	0	0	0	0	0
11	6	0	0	0	0	0
12	17	0	11	0	6	0
13	17	0	6	0	6	0
14	8	0	3	0	3	0

CHART 16

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS AT STEVENS POINT STATE COLLEGE

Fall, 1958

26 Classrooms

Period	M	T	W	TH	F	S
1	81	92	35	85	23	0
2	92	85	58	88	58	0
3	77	42	81	42	78	0
4	65	62	54	62	69	0
5	27	50	27	50	46	0
6	23	46	27	42	46	0
7	69	46	69	46	62	0
8	69	46	65	42	65	0
9	15	12	15	12	15	0

CHART 17

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS AT STOUT STATE COLLEGE

Fall, 1958

18 Classrooms

Period	M	T	W	TH	F	S
1	44	28	39	28	28	0
2	50	56	61	50	33	0
3	67	78	6	89	22	0
4	61	39	67	39	44	0
5	39	28	33	28	17	0
6	50	50	44	50	33	0
7	44	33	72	33	39	0
8	67	28	67	22	28	0
9	44	39	39	39	28	0

CHART 18

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS

AT SUPERIOR STATE COLLEGE

Fall, 1958

23 Classrooms

Period	M	T	W	TH	F	S
1	52	96	35	96	96	0
2	91	61	74	65	91	17
3	96	17	96	87	9	17
4	83	48	91	48	91	17
5	61	57	52	57	52	9
6	57	43	43	57	39	13
7	65	78	78	65	70	9
8	39	39	39	35	35	0
9	4	0	4	4	0	0
10	0	0	0	0	0	0
11	0	0	0	0	0	0
12	4	13	9	4	0	0
13	4	13	9	4	0	0
14	4	13	9	4	0	0

CHART 19

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS AT WHITEWATER STATE COLLEGE

Fall, 1958

22 Classrooms

Period	M	T	W	TH	F	S
1	41	95	36	95	95	14
2	41	95	32	95	95	14
3	77	9	82	0	82	14
4	86	91	32	91	32	0
5	77	77	23	77	27	0
6	82	86	5	86	0	0
7	95	36	91	36	95	0
8	91	45	95	41	95	0
9	9	91	86	86	9	0

CHART 20

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS AT WISCONSIN INSTITUTE OF TECHNOLOGY

Fall, 1958

9 Classrooms

Period	M	T	W	TH	F	S
1	89	100	100	100	67	0
2	78	67	89	56	78	0
3	89	78	89	56	78	0
4	100	78	100	78	78	0
5	11	0	11	11	0	C
6	89	78	100	100	67	0
7	56	44	67	67	22	0
8	44	56	56	78	33	0
9	0	0	11	0	22	0

CHART 21

PERCENT OF ROOM PERIOD USE OF 100% CLASSROOMS AT THE UNIVERSITY OF WISCONSIN, MADISON

Fall, 1958

232 Classrooms

Period	M	T	W	TH	F	S
1	72	60	78	63	70	3
2	88	81	90	81	82	11
3	90	82	89	78	88	8
4	95	78	90	83	88	1
5	40	32	43	35	31	0
6	90	76	88	77	75	0
7	76	64	73	65	61	0
8	53	44	49	46	31	0
9	16	18	16	19	8	0
10	2	4	1	2	0	0
11	5	6	3	5	0	0
12	4	4	2	4	0	0

CHART 22

PERCENT OF ROOM PERIOD USE OF 1009 CLASSROOMS AT U-W MILWAUKEE

Fall, 1958

78 Classrooms

Period	M	T	W	TH	F	S
1	19	13	18	14	9	0
2	75	70	78	67	59	5
3	68	63	72	70	68	4
4	81	61	86	61	78	5
5	78	62	82	59	73	0
6	68	42	67	47	61	0
7	76	65	77	63	67	0
8	71	57	72	56	66	0
9	25	25	29	22	24	0
10	4	6	6	5	4	0
11	16	19	13	18	1	0
12	35	38	42	32	0	0
13	46	48	49	42	1	0
14	41	44	42	34	3	0
15	25	33	34	22	3	0

Classroom Utilization Fall, 1956 and 1958

A Comparison of Associated Factors Concerning Utilization of Regularly Scheduled Classrooms (Charts #23-34). By examining the associated utilization factors at each institution for the first semester, 1956 and 1958, certain correlations become evident. For example, as the number of student stations per room increase the square footage per student station decreases, provided the same rooms are used. Sometimes, due to the remodeling of existing structures to convert available space into classrooms to temporarily accommodate expanding enrollments, the number of square feet per student station may increase.

At each of Wisconsin's institutions of higher education enrollments grew faster than classrooms were provided; therefore it was necessary to accommodate more students per week per room. This was accomplished by several methods. Some of these methods were to increase the number of room periods used per week, increase the number of student stations per room, or increase both students per room and room periods.

The average number of room periods used per week per room increased at all of the Wisconsin institutions of higher education and 50 per cent of them increased the average number of student stations per room. There is a definite relationship between the average room periods used and the per cent of student stations utilized. All of the institutions increased the per cent of student stations utilized except one. Stout is an example of this. A closer examination of Chart #29 reveals that this institution increased the average number of student stations per room and also increased the average number of room periods but did not completely occupy the additional available student stations. However, an average of

47 more student stations were occupied per week per room.

If the increase in enrollment is not in the same proportion as the additional student stations made available, the per cent of utilization may decrease though more students occupy the rooms per week. The University of Wisconsin, Madison increased the room periods used per week per room, increased the average number of student stations per room, and still maintained the same per cent of student station utilization.

It should be noted that in this analysis the University of Wisconsin--Milwaukee utilization is shown three ways: the day schedule, the night schedule and the combined night and day schedule. This was done as Milwaukee is the only institution with a separate evening program. The evening schedule in this study begins after the 4:30 classes. The comparison charts show an increase of nine rooms and average 10 student stations more per room since the 1956 study for the evening program. This gives an average student station occupancy increase of 41 per week per room. However, since the number of student stations increased at such a large number, the per cent of student stations occupied decreased slightly.

The combined night and day schedule indicates that the University of Wisconsin--Milwaukee accommodated an average of 100 more students per week per room over the 1956 study by a slight increase in room periods used and by a major increase in the average number of student stations per room.

The larger classrooms provide a greater number of student stations available per week; however, this increase in student station availability may not always be fully utilized because of enrollments in the particular curriculum and sectioning of classes. On the other hand, the smaller classrooms with fewer student stations will not accommodate as many students per week but the per cent of student stations utilized may be greater.

As was previously mentioned, the size of the classrooms provided must be related to the curriculum and enrollment trends of each institution. No hard and fast rule can be applied to establish a standard classroom size for all institutions. A thorough knowledge of the effect of the associated utilization factors will enable a more objective application to the individual institution.

C H A R T 23

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT EAU CLAIRE STATE COLLEGE

Fall 1956 and Fall 1958

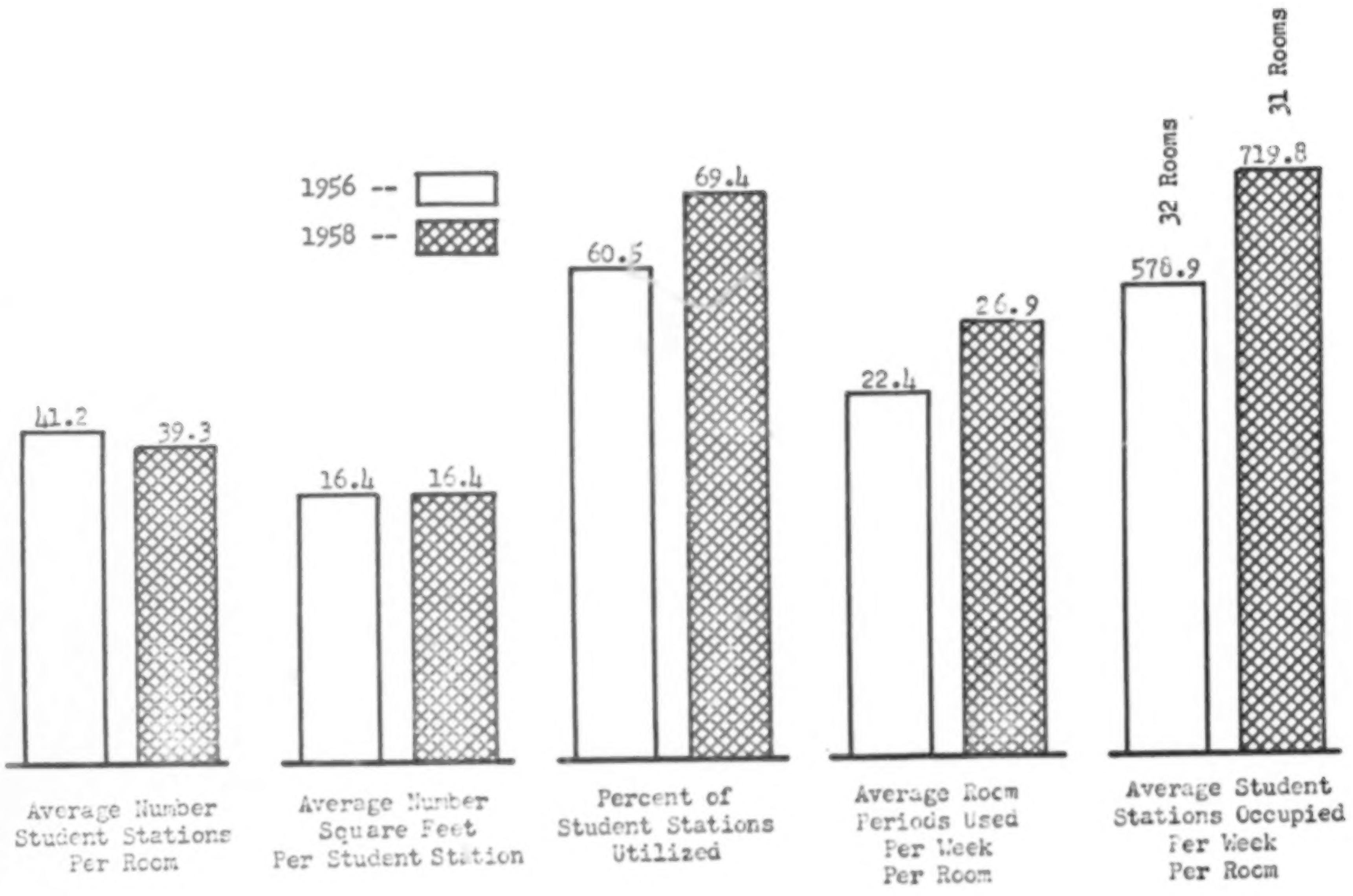
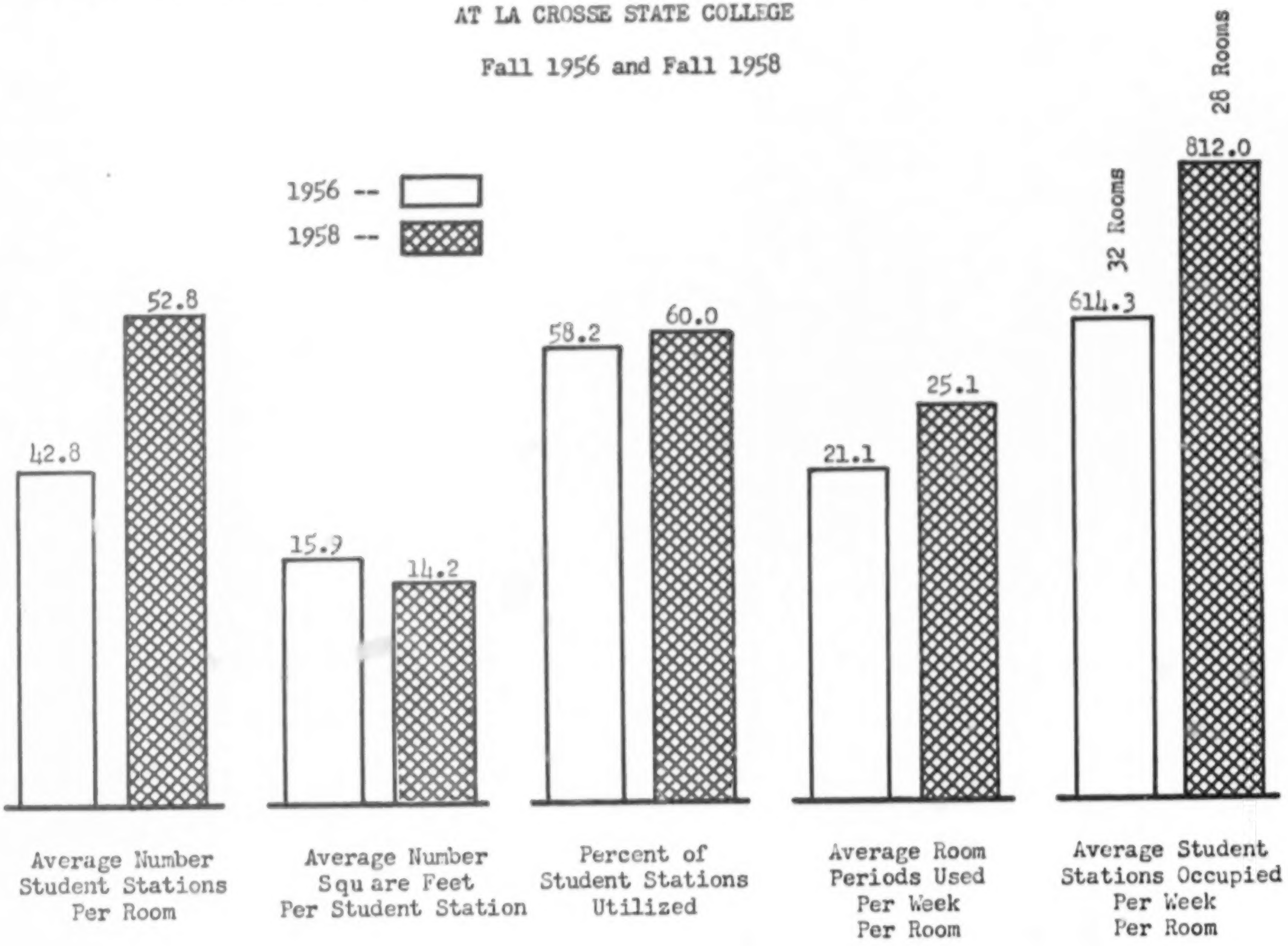


CHART 24

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT LA CROSSE STATE COLLEGE

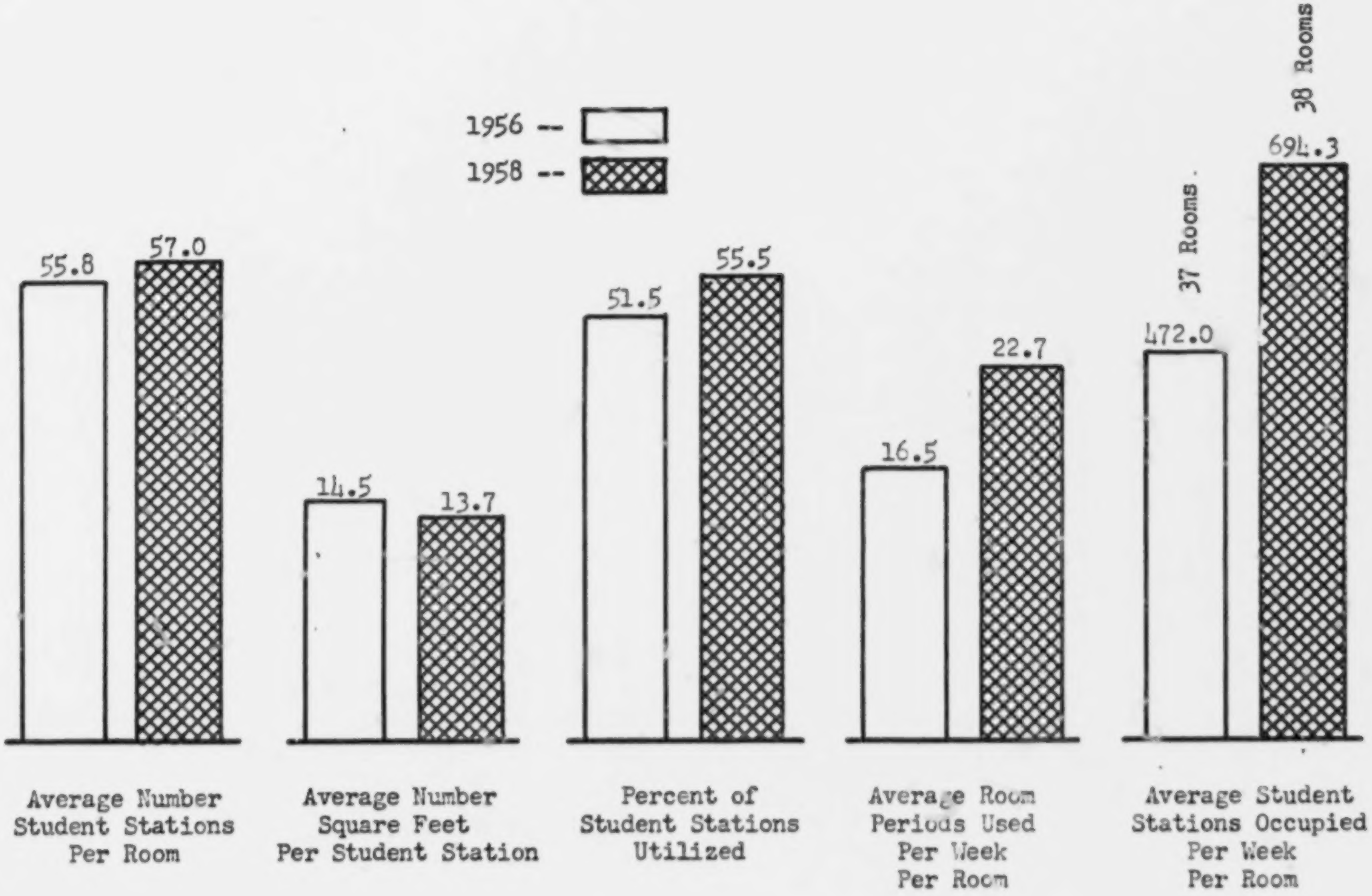
Fall 1956 and Fall 1958



C H A R T 25

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT OSHKOSH STATE COLLEGE

Fall 1956 and Fall 1958



C H A R T 26

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT PLATTEVILLE STATE COLLEGE

Fall 1956 and Fall 1958

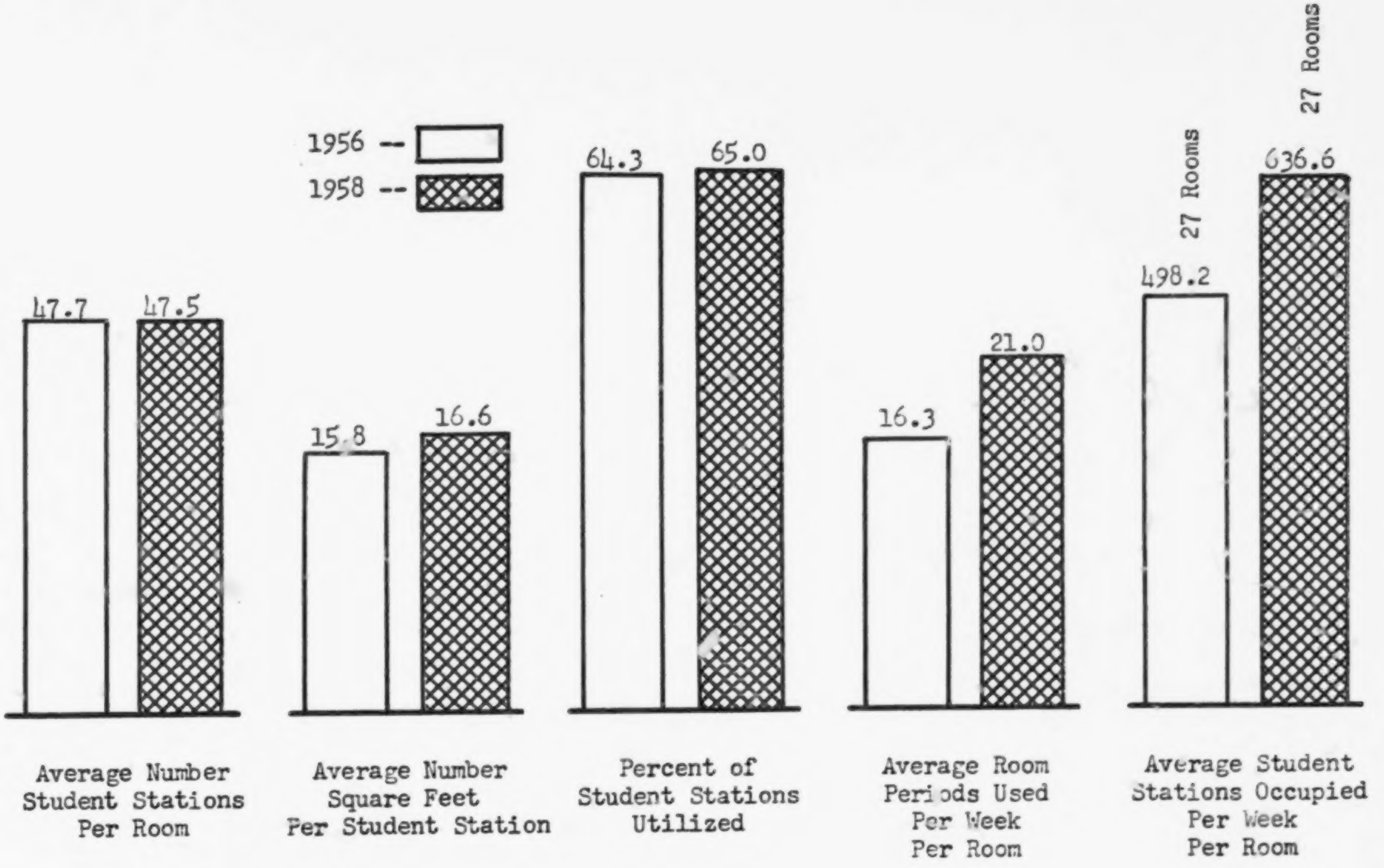
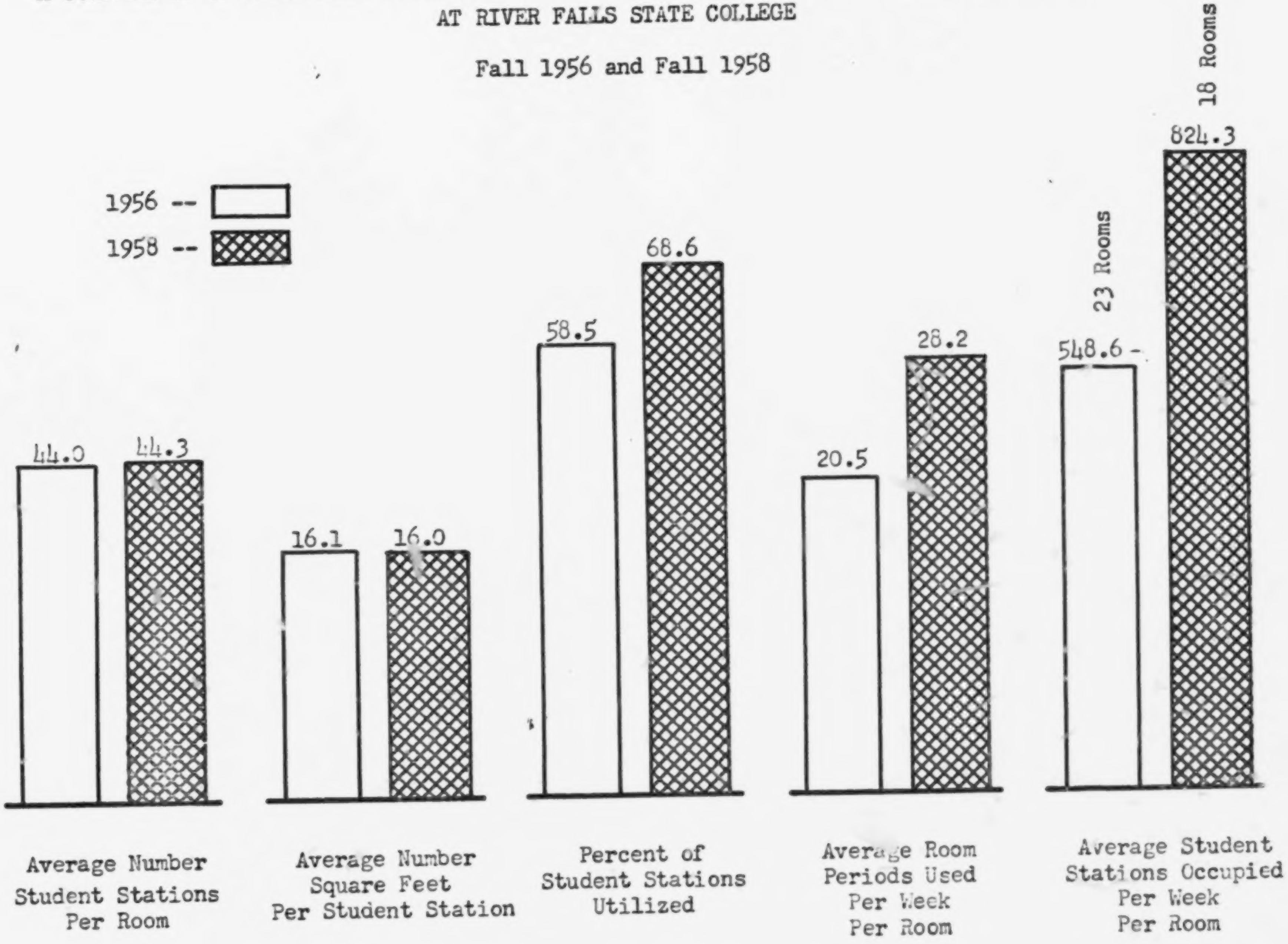


CHART 27

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT RIVER FALLS STATE COLLEGE

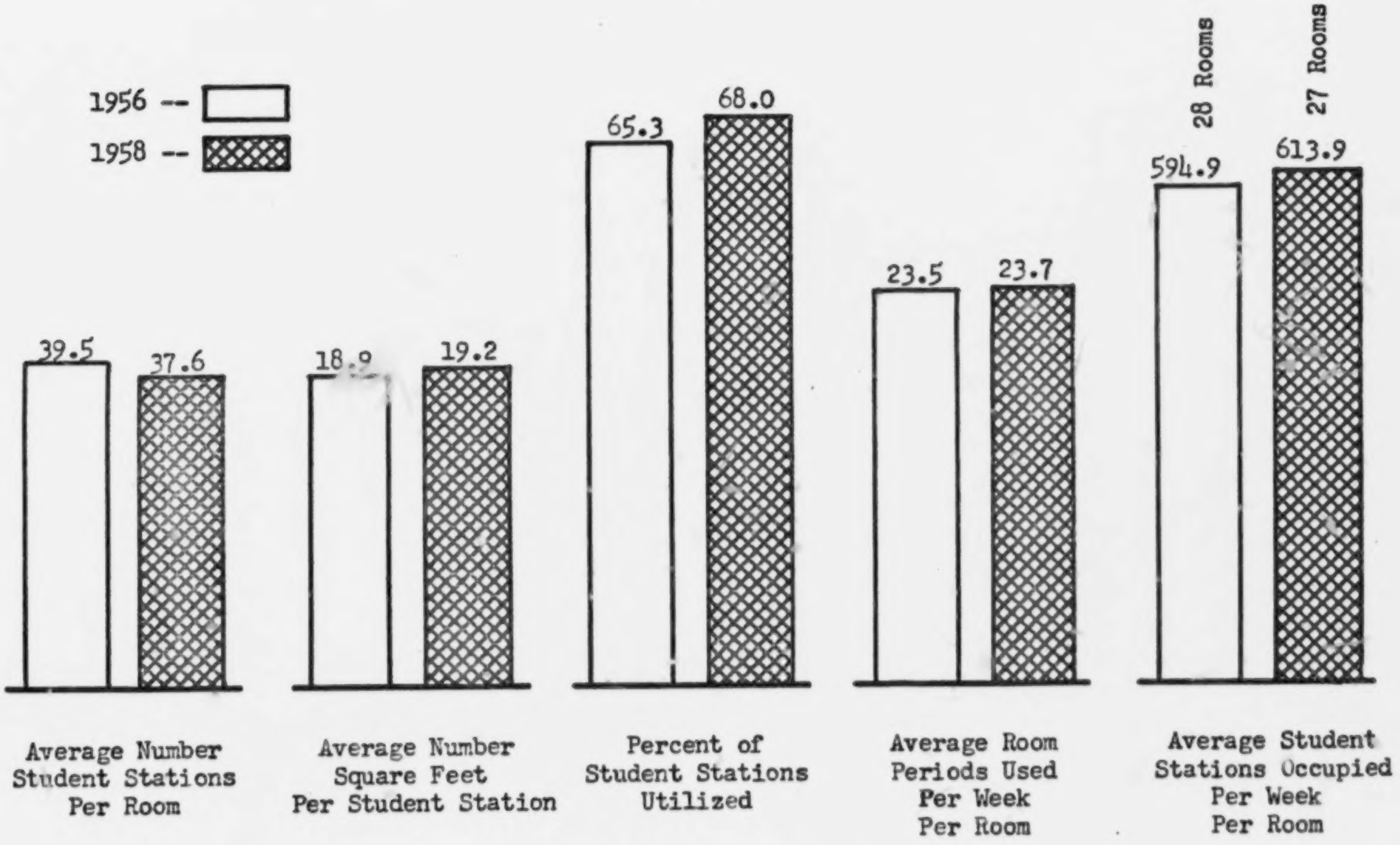
Fall 1956 and Fall 1958



C H A R T 28

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT STEVENS POINT STATE COLLEGE

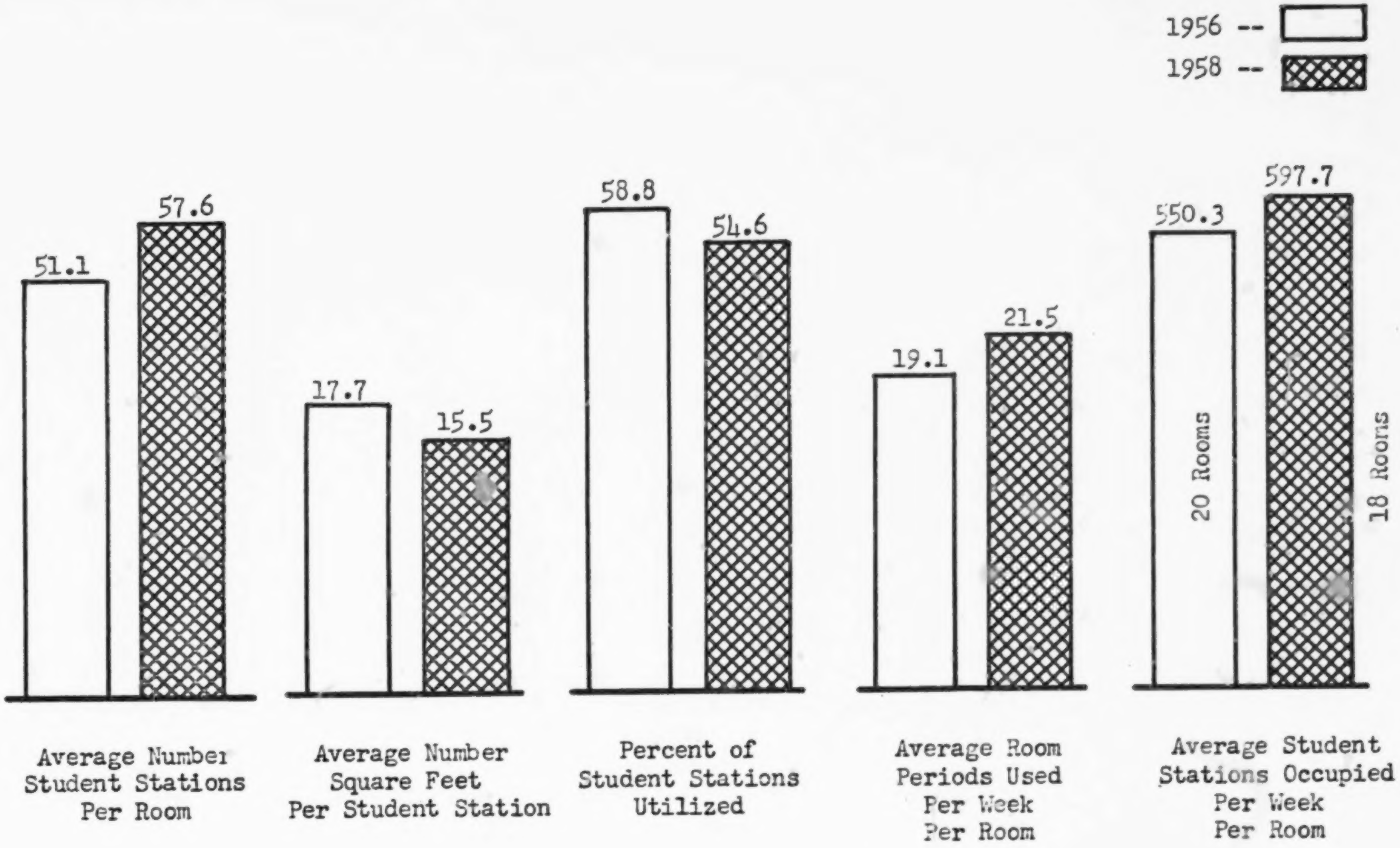
Fall 1956 and Fall 1958



C H A R T 29

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT STOUT STATE COLLEGE

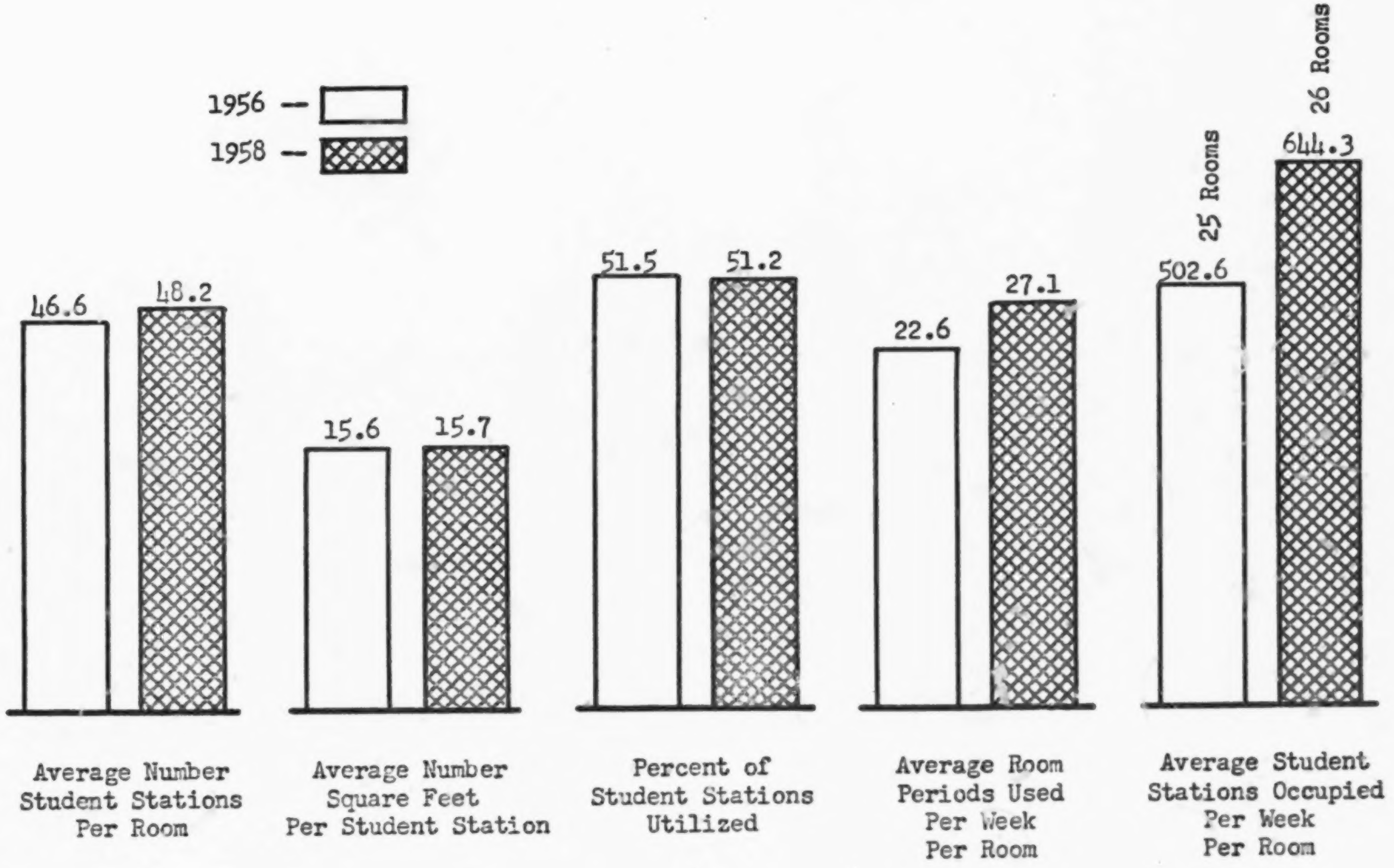
Fall 1956 and Fall 1958



C H A R T 30

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT SUPERIOR STATE COLLEGE

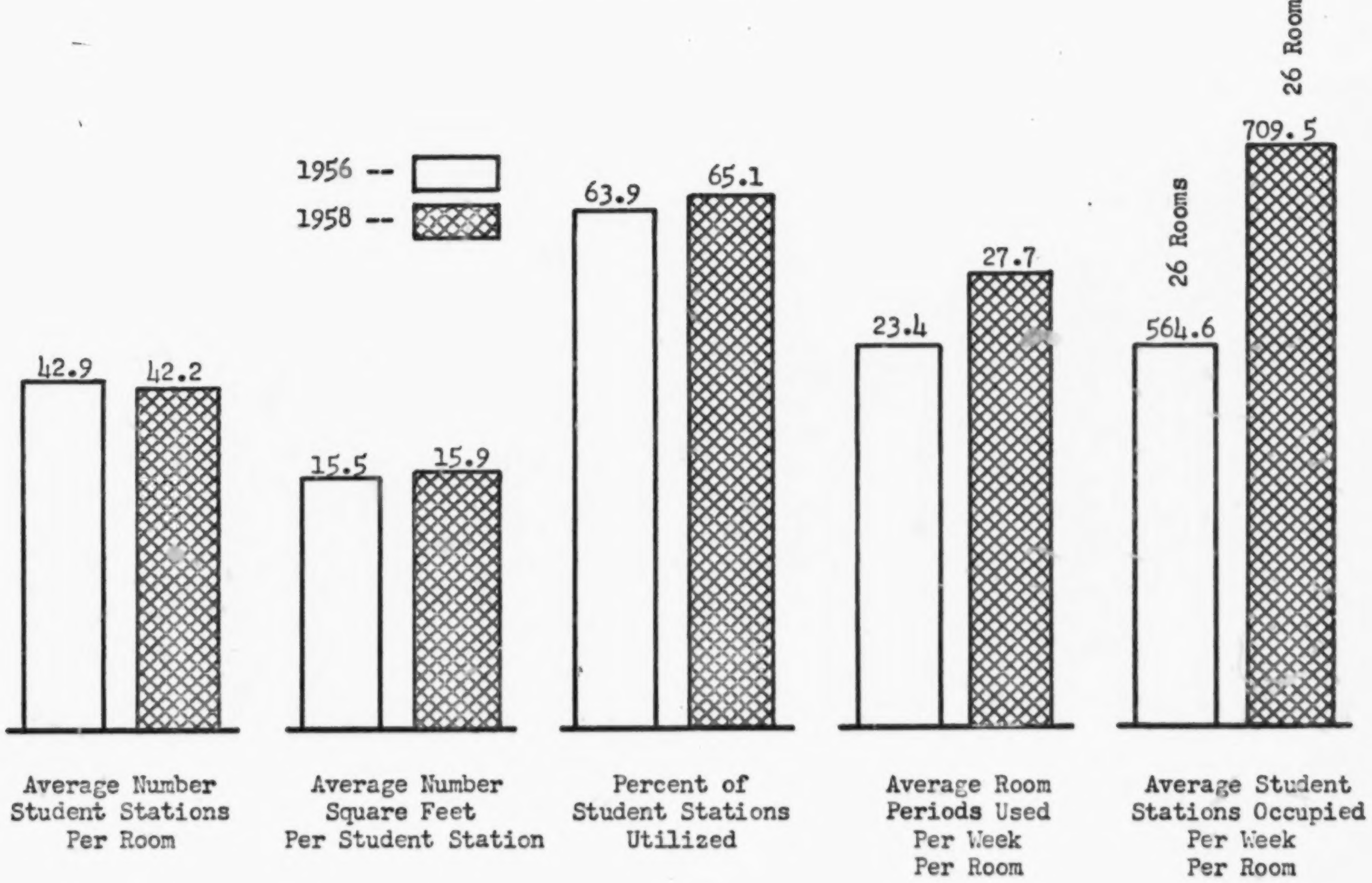
Fall 1956 and Fall 1958



C H A R T 31

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT WHITEWATER STATE COLLEGE

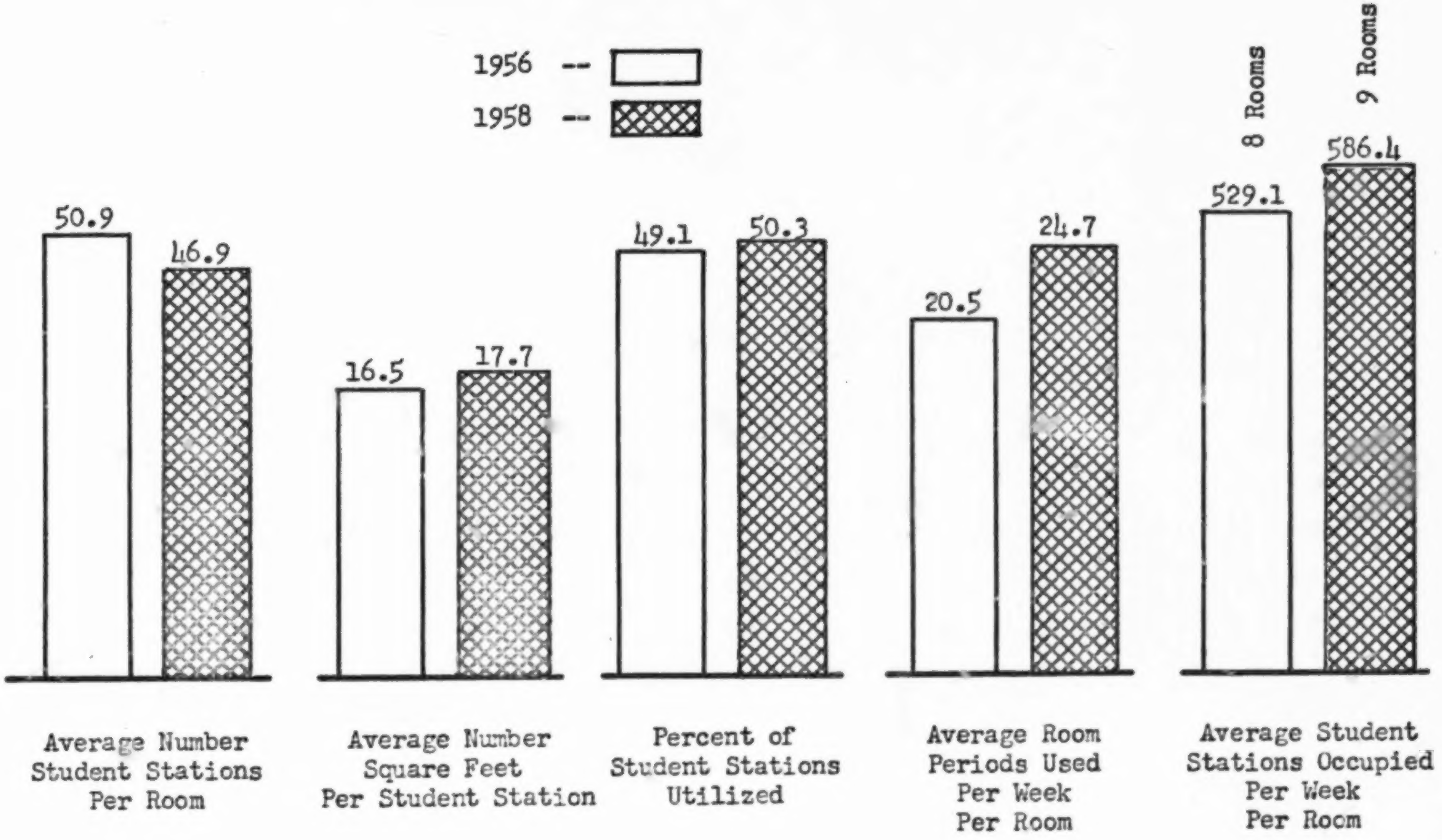
Fall 1956 and Fall 1958



C H A R T 32

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT WISCONSIN INSTITUTE OF TECHNOLOGY

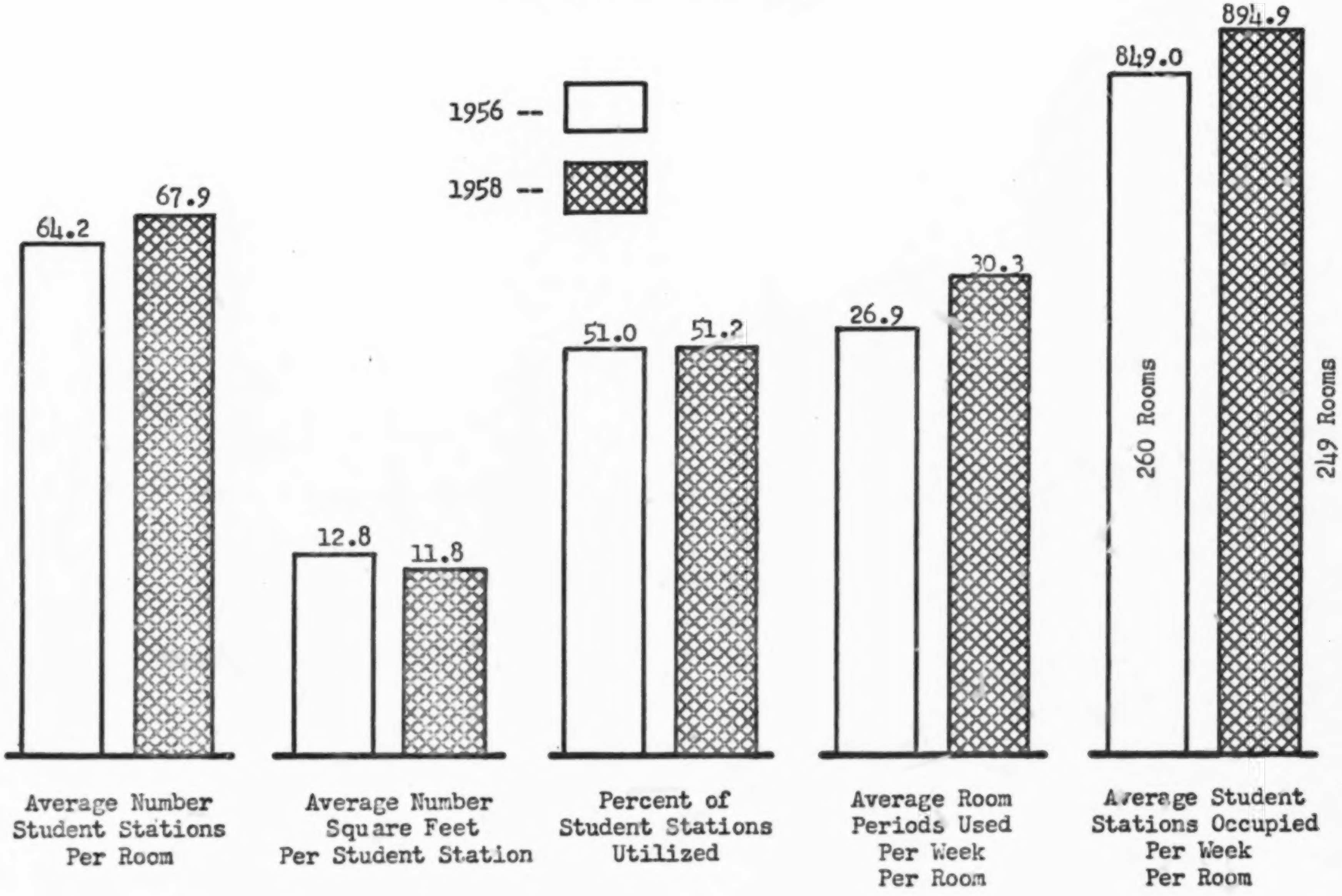
Fall 1956 and Fall 1958



C H A R T 33

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT UNIVERSITY OF WISCONSIN, MADISON

Fall 1956 and Fall 1958



C H A R T 34

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT UNIVERSITY OF WISCONSIN--MILWAUKEE (COMBINED DAY AND NIGHT SCHEDULE)

Fall 1956 and Fall 1958

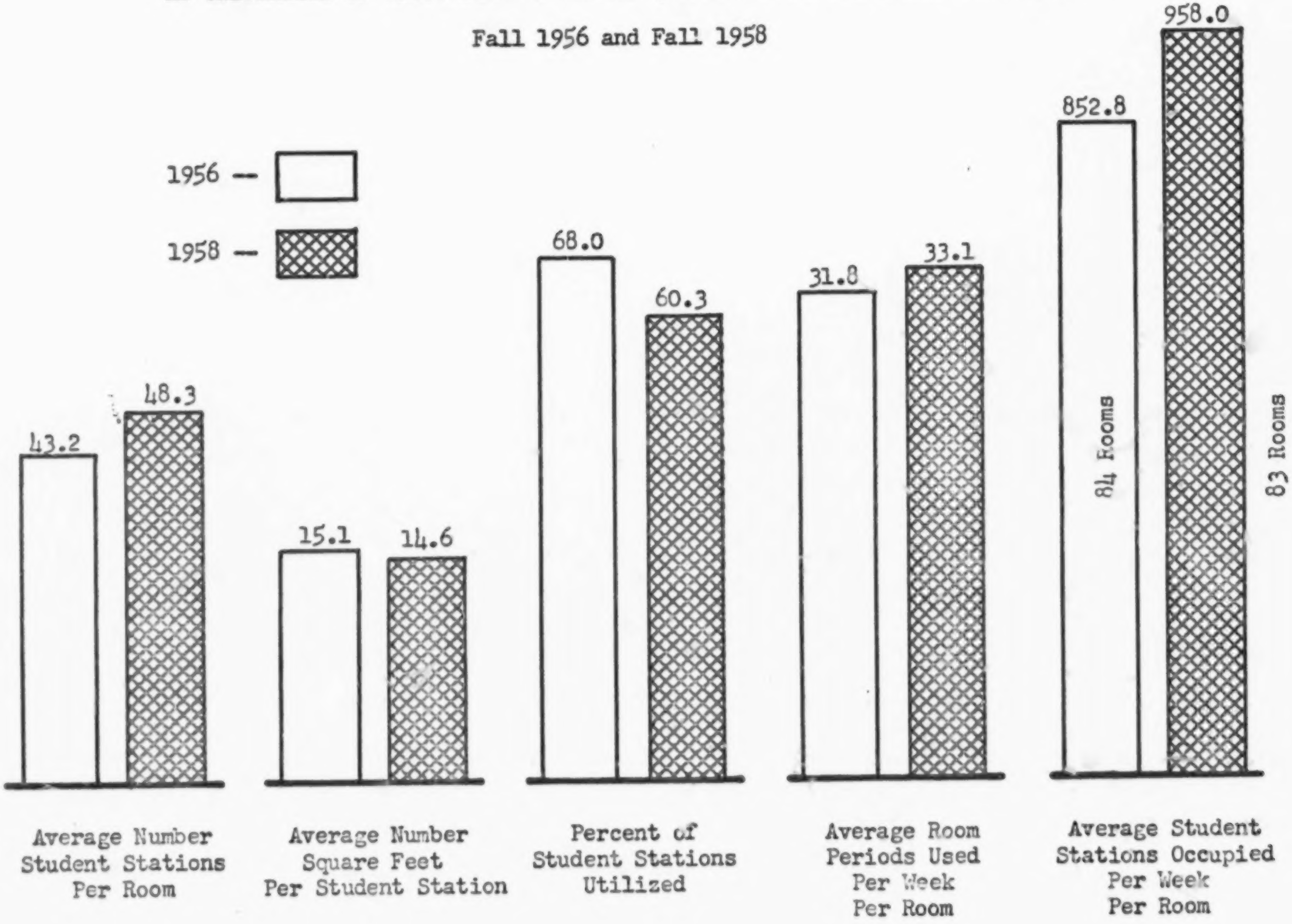
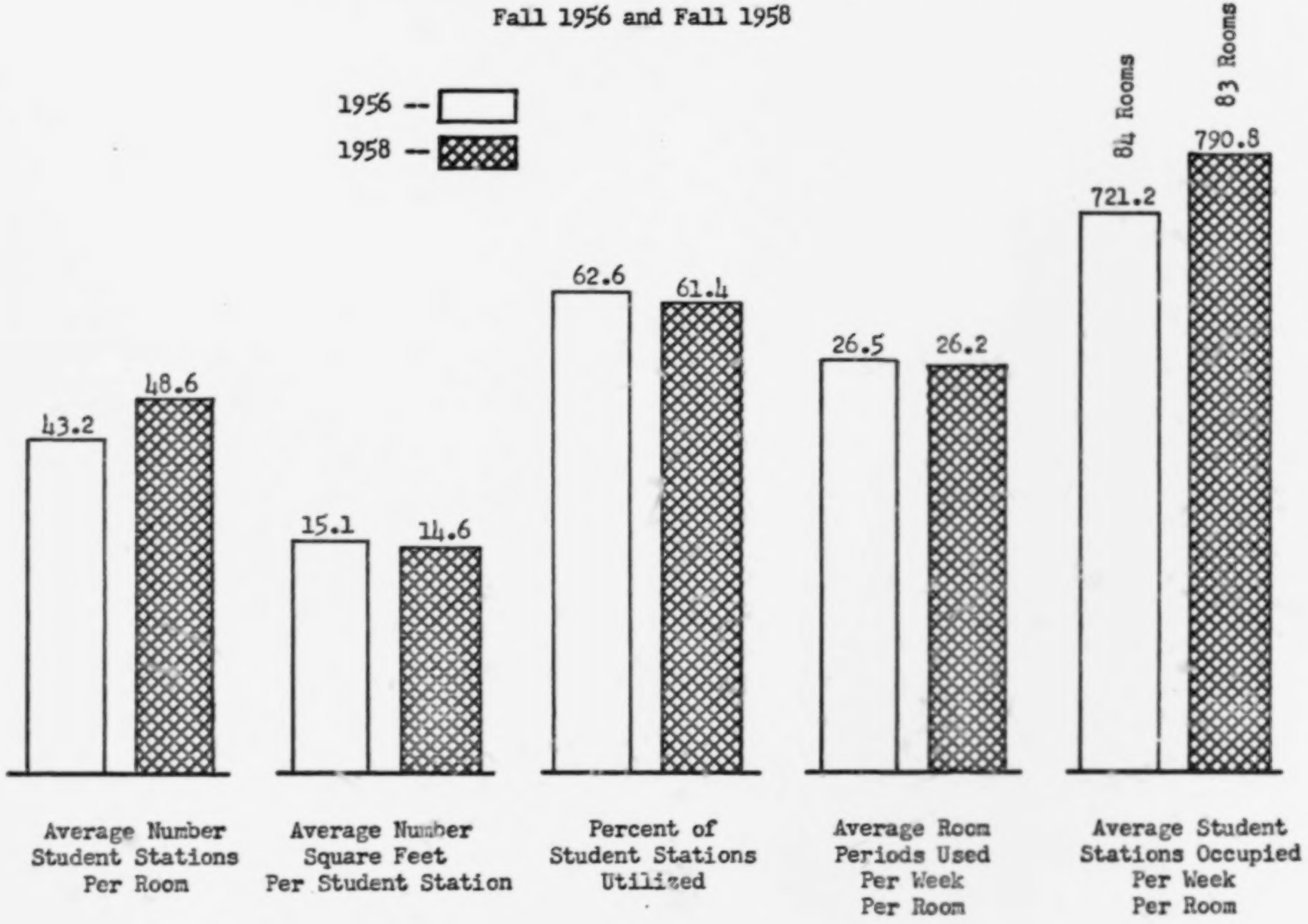


CHART 34a

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT UNIVERSITY OF WISCONSIN--MILWAUKEE (DAY SCHEDULE)

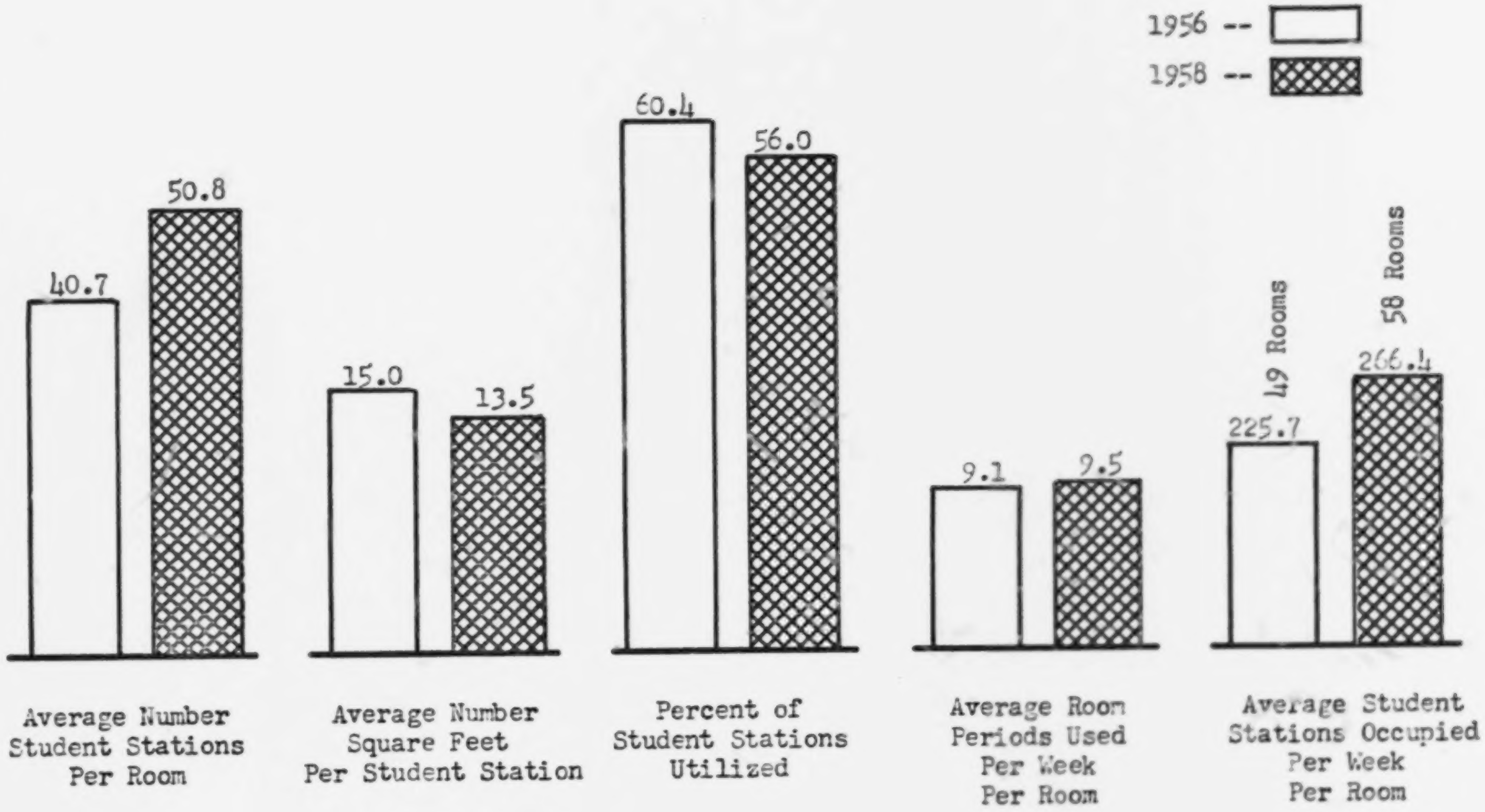
Fall 1956 and Fall 1958



C H A R T 34b

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED CLASSROOMS AT UNIVERSITY OF WISCONSIN--MILWAUKEE (NIGHT SCHEDULE)

Fall 1956 and Fall 1958



LABORATORIES

For the purpose of this study, a laboratory is defined as: an instructional room equipped for a specific purpose. Included as part of the laboratories are service rooms such as balance rooms, storerooms, etc., serving that particular laboratory. If the storeroom serves more than one laboratory, it is classified as "other active instructional space".

The facilities needed for the various types of laboratories vary so greatly, that it is not always possible to achieve the ideal utilization for each room. The curriculum of the school plays an important role, as well as the student enrollment in each field. The total laboratory utilization, as compared with other institutions in the state, will be discussed first; followed by a break down by the student station capacity of the rooms for each institution, distribution of scheduled periods during the hours of the day, and a breakdown of weekly utilization by the type of laboratory, such as art, chemistry, etc. Finally, a comparison will be made of the laboratory utilization in the 1956 and 1958 studies and the associated factors involved.

All Institutional Laboratory Utilization

Assignable Square Feet Per Student Enrolled (Chart #35). The assignable square feet of laboratory space per student enrolled ranged from thirty seven square feet at Stout to six and six-tenths square feet at Milwaukee. The institutions having large scale laboratory equipment necessarily have more laboratory space per student. Industrial education, Engineering and certain Agricultural laboratories require more square feet of space.

Stout has more laboratories than classrooms and is the only school where this is true. The Wisconsin Institute of Technology has nearly an even number of each and all other schools have more classrooms than laboratories.

It is interesting to note that the University and state college averages differ by only one-tenth of a square foot in laboratory space per student enrolled. The University of Wisconsin, Madison campus follows Platteville in area per student enrolled. The technical laboratories in the colleges of engineering and agriculture perhaps account for this.

Assignable Square Feet Per Student Station (Chart #36). There is a close correlation between the institutions having a large area of laboratory space per student enrolled and those having a large area per student station for laboratories. A student station, as was mentioned under the classroom section, is the seat or laboratory facility which a student occupies in a room. The area per student station is based on the entire area of the room irrespective of the split function which some rooms may have.

The state colleges range from 57.4 square feet per student station at Stout to 24.1 square feet at Whitewater, with the average being 36.1 square feet. Superior has a large electrical engineering laboratory which brings its area per student station second in rank. The all University average is 44.7 square feet per student station.

The area per student station has decreased four-tenths of a square foot at the state colleges from the 1956 study, and 2.4 square feet at the

University. However, since there was a refinement in laboratory definitions in the 1958 study, this has little, if any, significance.

In general, the school having curriculums requiring large laboratory equipment need the greatest number of square feet per student station. The all institutional average for Wisconsin schools is 41.3 square feet per student station. According to a preliminary report of the Inventory of College and University Physical Facilities, October, 1959,[1] from data received from 1,351 institutions, the average area per student station for laboratories was found to be 49.6 square feet. Wisconsin's all institutional average falls below this by 8.3 square feet per student.

Average Room Periods Used Per Week Per Room (Chart #37). The number of laboratory periods per week that a room is used was determined on a functional basis. College laboratories are used by elementary and secondary school pupils in some schools and in other instances college students are using facilities in the space provided for elementary and secondary school students. Music laboratories in many schools is an example of this. These facilities are needed at each institution, but often not on a full-time basis for college students. Better utilization can sometimes be achieved by using these laboratories on a split function basis. However, closer examination of the curriculum and enrollments may indicate a need for more college or laboratory school space. At the University of Wisconsin, Madison, many of the laboratories are divided between instruction and research.

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[1] William S. Fuller, "Status of the Inventory of College and University Physical Facilities, and Highlights from a Preliminary Report", U. S. Office of Education. October, 1959.

A standard of 24 room periods per week per room for laboratories was recommended in the 1956 Physical Facilities Study. The all institutional and University of Wisconsin averages now surpass that figure. The University of Wisconsin--Milwaukee and Stout use approximately 28 room periods per week. Six of the Wisconsin institutions of higher education now use their laboratories more than 24 room periods used per week.

All of the institutions with the exception of Wisconsin Institute of Technology increased their room period use between 1956 and 1958. Wisconsin Institute of Technology remained approximately the same. (In July, 1959, Wisconsin Institute of Technology was merged with Platteville State College).

Per Cent of Student Stations Utilized During Scheduled Periods (Chart #38). The student stations occupied during the scheduled periods divided by the student stations available during those periods results in the per cent of student stations utilized.

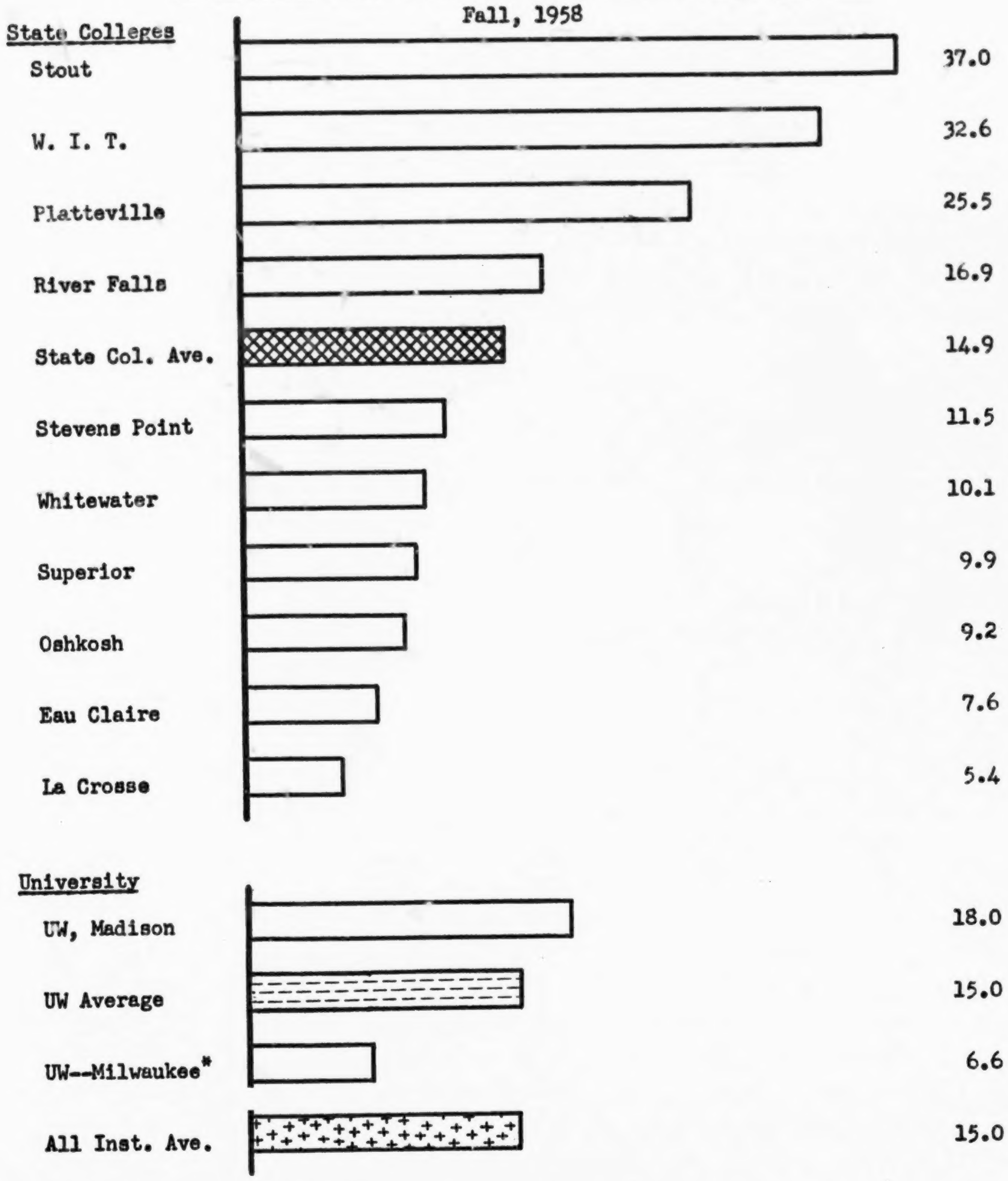
Stout was the only institution to exceed the 80 per cent goal recommended for student station utilization in the 1956 study. Eau Claire, Oshkosh, Stevens Point, Superior and University of Wisconsin--Milwaukee have improved their per cent of student station utilization.

Later in this part of the study a closer comparison will be made of the associated factors affecting utilization for each institution. There is a definite relationship between the number of room periods used per week and the per cent of student stations occupied. If the room periods, number of student stations per room and the number of laboratories used remain the same, the percent of student stations utilized will increase with increased enrollments, provided the students are taking that particular curricula. The student enrollments are increasing each year as was indicated in the section dealing with enrollment trends. In addition, the quality of the existing laboratories must also be considered when determining the purpose for which these facilities may be utilized.

CHART 35

THE ASSIGNABLE SQUARE FEET OF LABORATORY SPACE PER STUDENT ENROLLED AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN

Fall, 1958

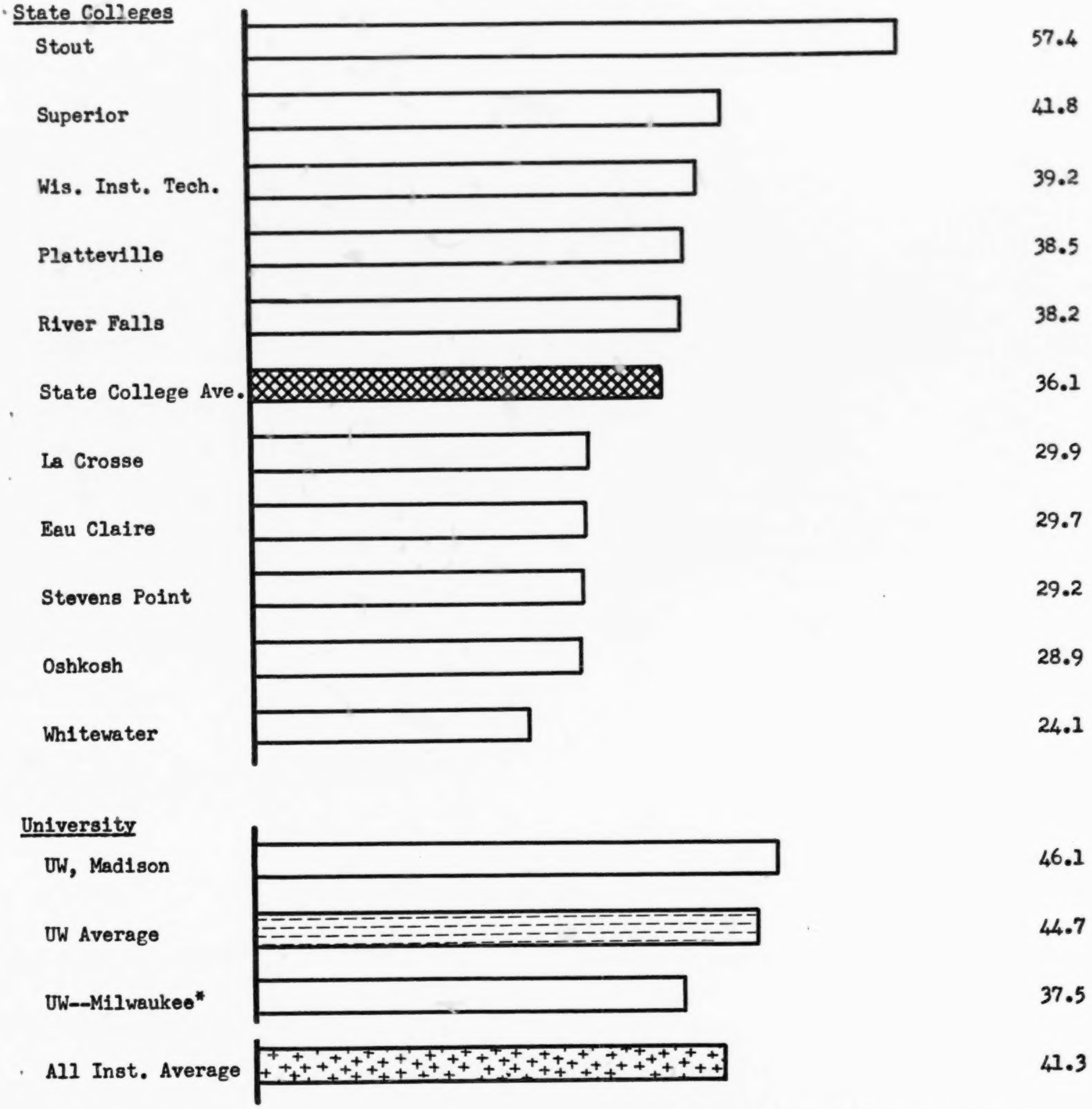


* Includes 711 full-time equivalent night students.

CHART 3

THE NUMBER OF ASSIGNABLE SQUARE FEET PER STUDENT STATION FOR LABORATORIES AT WISCONSIN STATE COLLEGES AND UNIVERSITY OF WISCONSIN

Fall, 1958



* Includes five engineering laboratories rented from the Milwaukee Vocational School. This space was not included in the 1956 study.

CHART 37

THE AVERAGE ROOM PERIODS USED PER WEEK PER ROOM FOR LABORATORIES AT WISCONSIN STATE COLLEGES AND UNIVERSITY OF WISCONSIN

Fall, 1958

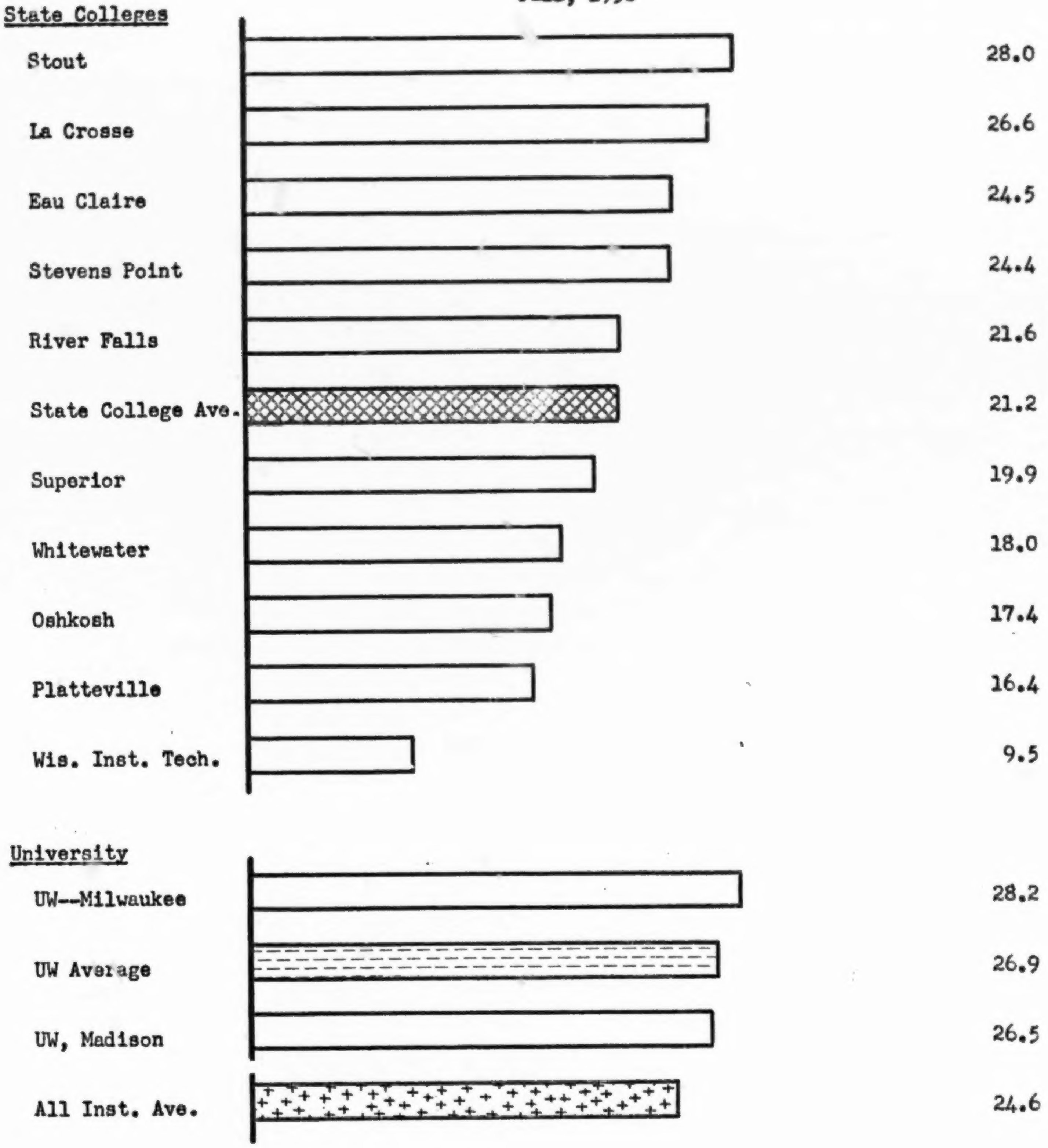
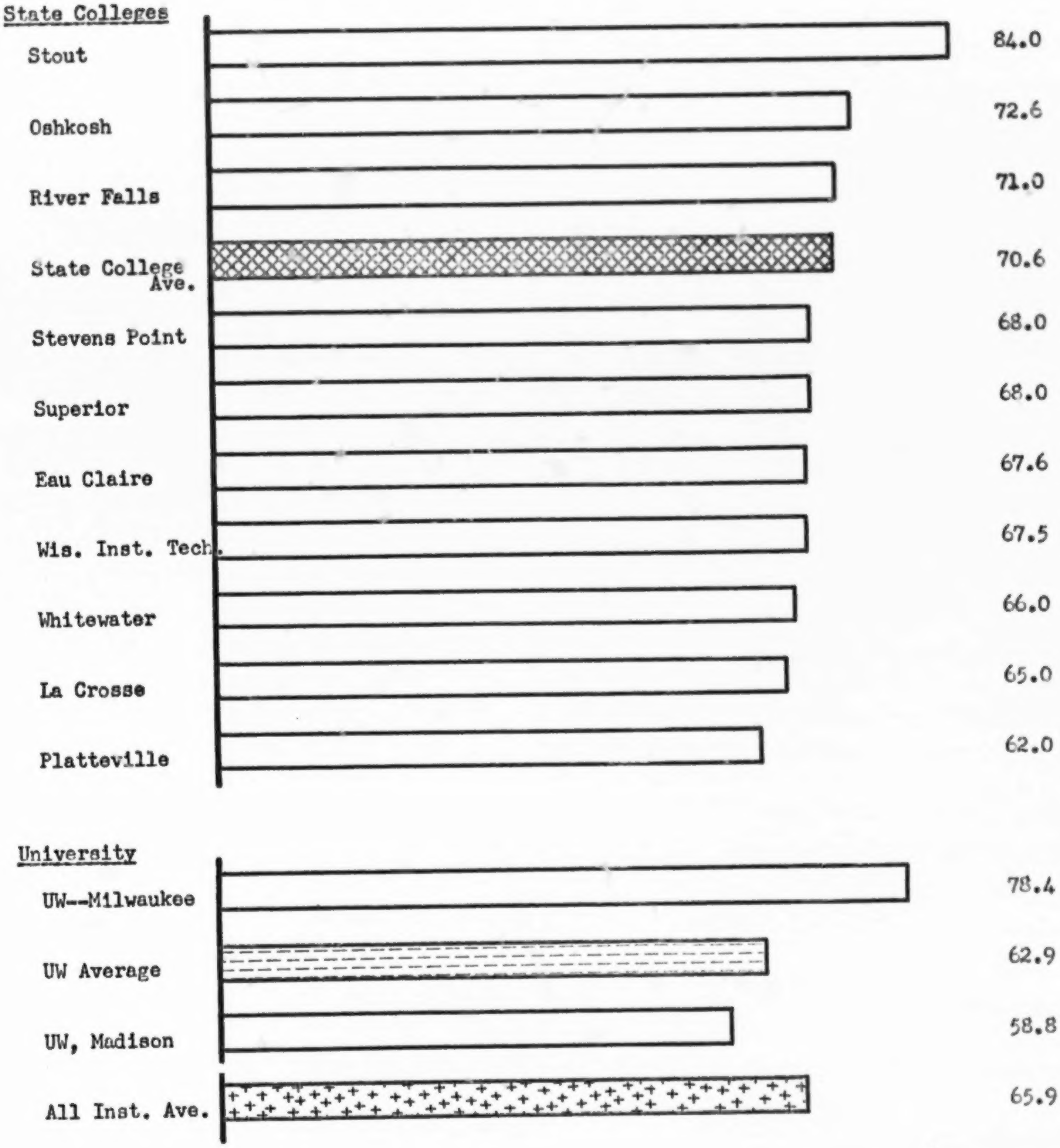


CHART 38

THE PERCENT OF STUDENT STATION UTILIZATION FOR LABORATORIES DURING SCHEDULED PERIODS AT WISCONSIN STATE COLLEGES AND UNIVERSITY

Fall, 1958



Institutional Analysis of Laboratory Utilization by the Number of Students Accommodated Per Room

Weekly Utilization by Student Station Capacity (Charts #39-43). The size of the rooms according to the number of student stations at the different institutions varies a great deal. This has a definite relationship to the per cent of student station utilization which it is possible for an institution to attain. In many instances the size of laboratories is not correlated with the intended educational purposes. An undue amount of small laboratories requires additional sections and conversely too many large laboratories result in poor utilization of student stations. With small enrollments, the smaller rooms are more advantageous. As the enrollments increase, the school having the larger rooms may be expected to increase their utilization providing the students are taking the courses for which these laboratories were designed. Laboratories are not as flexible as many classrooms; however, various types of laboratories are needed for the various curricula, whether they are filled to capacity or not. The number of staff available and the size of student body that can be effectively instructed in each particular field also must be considered.

The majority of schools have their laboratories in the 20-49 student station capacity. This represents an average of 73 per cent of all the laboratories at the state colleges and an average of 57 per cent at the University of Wisconsin, Madison and Milwaukee. In this category 50 per cent of all the institutions meet or exceed the standard of 24 average room periods used per week recommended in the 1956 study. Only one school in the state college group, Stout, has reached the recommended average room period use in the 0-19 category. On the other hand, the University of Wisconsin on both campuses exceeds the recommended standard in the 0-19 category.

Two-thirds of all the Wisconsin Institutions have laboratories in the 50-99 category. Only one laboratory at Eau Claire State College and 9 at the University of Wisconsin, Madison exceed 100 or over student stations per room.

As the number of student stations per room increases, the per cent of student stations utilized decreases, with one exception, the University of Wisconsin, Madison, where the 20-49 student station per room category has the highest per cent of utilization. It is evident that many of the smaller laboratories are presently being used beyond their intended student station capacity.

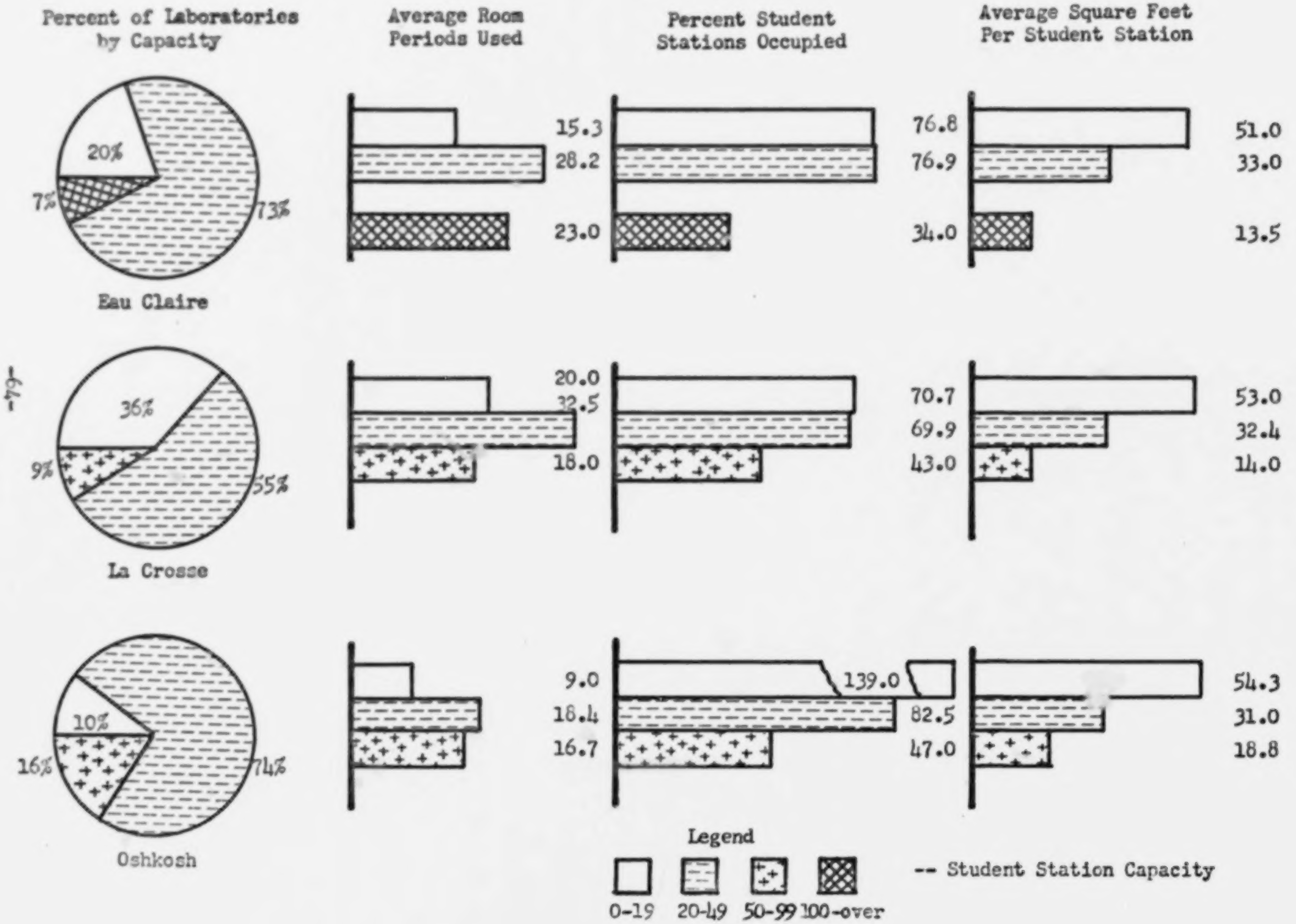
The large laboratories containing a student station capacity of 100 and over indicate a very low average room period and student station utilization. Perhaps these laboratories should be more closely examined in terms of curricula needs. From the standpoint of utilization these laboratories are not economical. Immediately the question arises as to whether or not these laboratories should be remodeled into smaller rooms or are they necessary to attain the institutional objectives?

The average square foot per student station decreases as the number of student stations per laboratory increases.

C H A R T 39

WEEKLY UTILIZATION OF LABORATORIES BY STUDENT STATION CAPACITY AT WISCONSIN STATE COLLEGES AND UNIVERSITY

Fall 1958



C H A R T 40

WEEKLY UTILIZATION OF LABORATORIES BY STUDENT STATION CAPACITY AT WISCONSIN STATE COLLEGES AND UNIVERSITY

Fall 1958

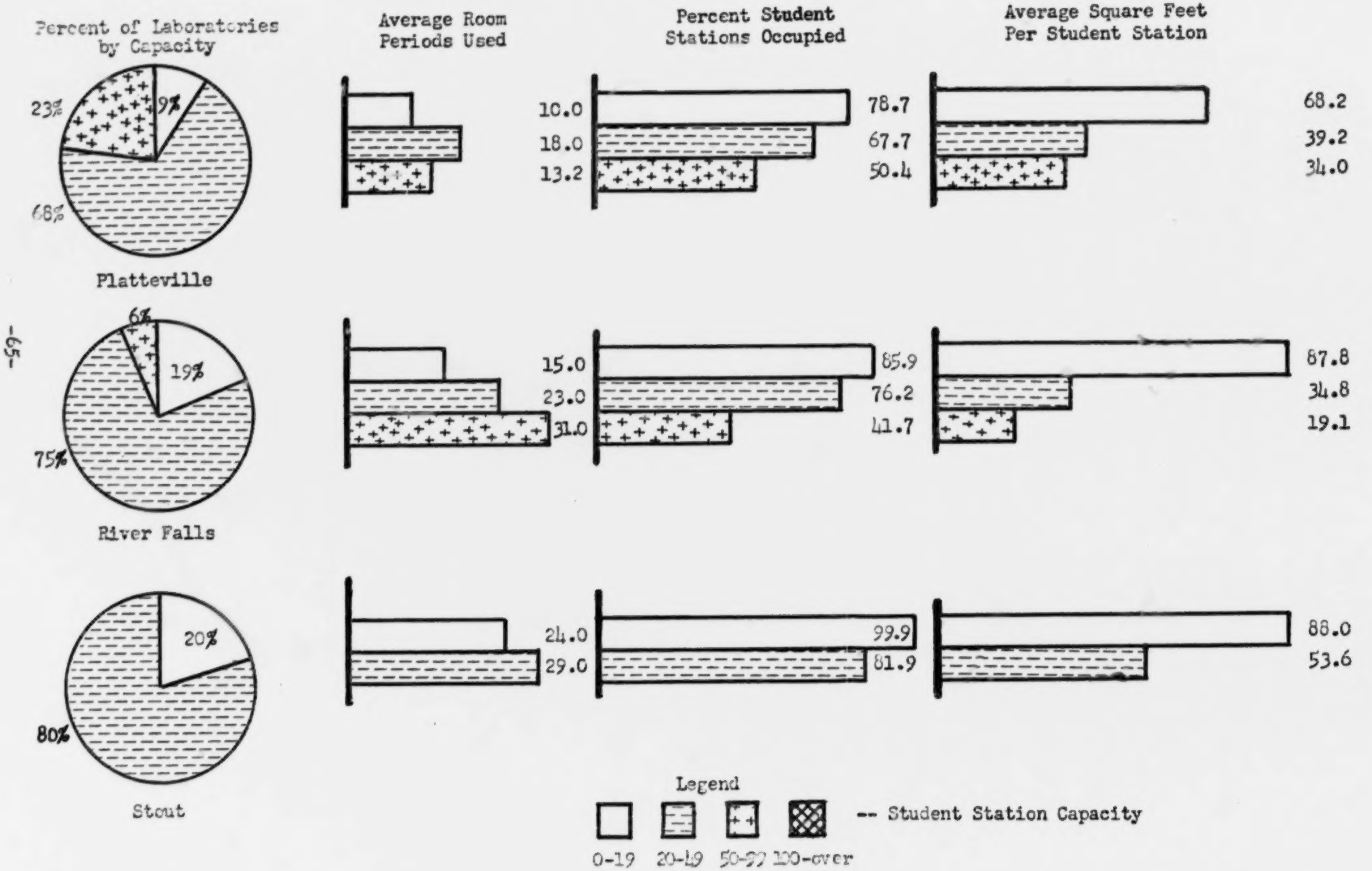
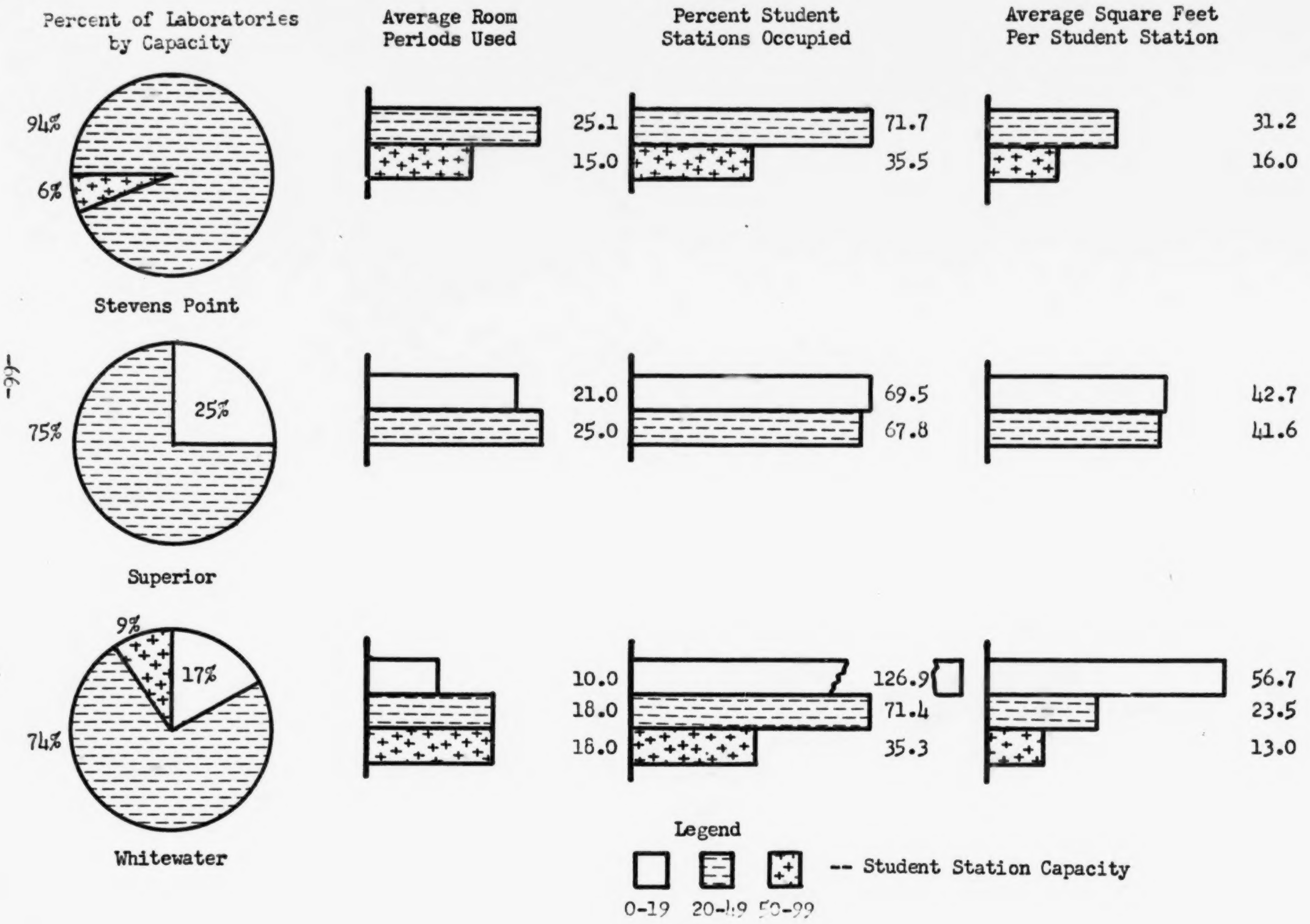


CHART 41

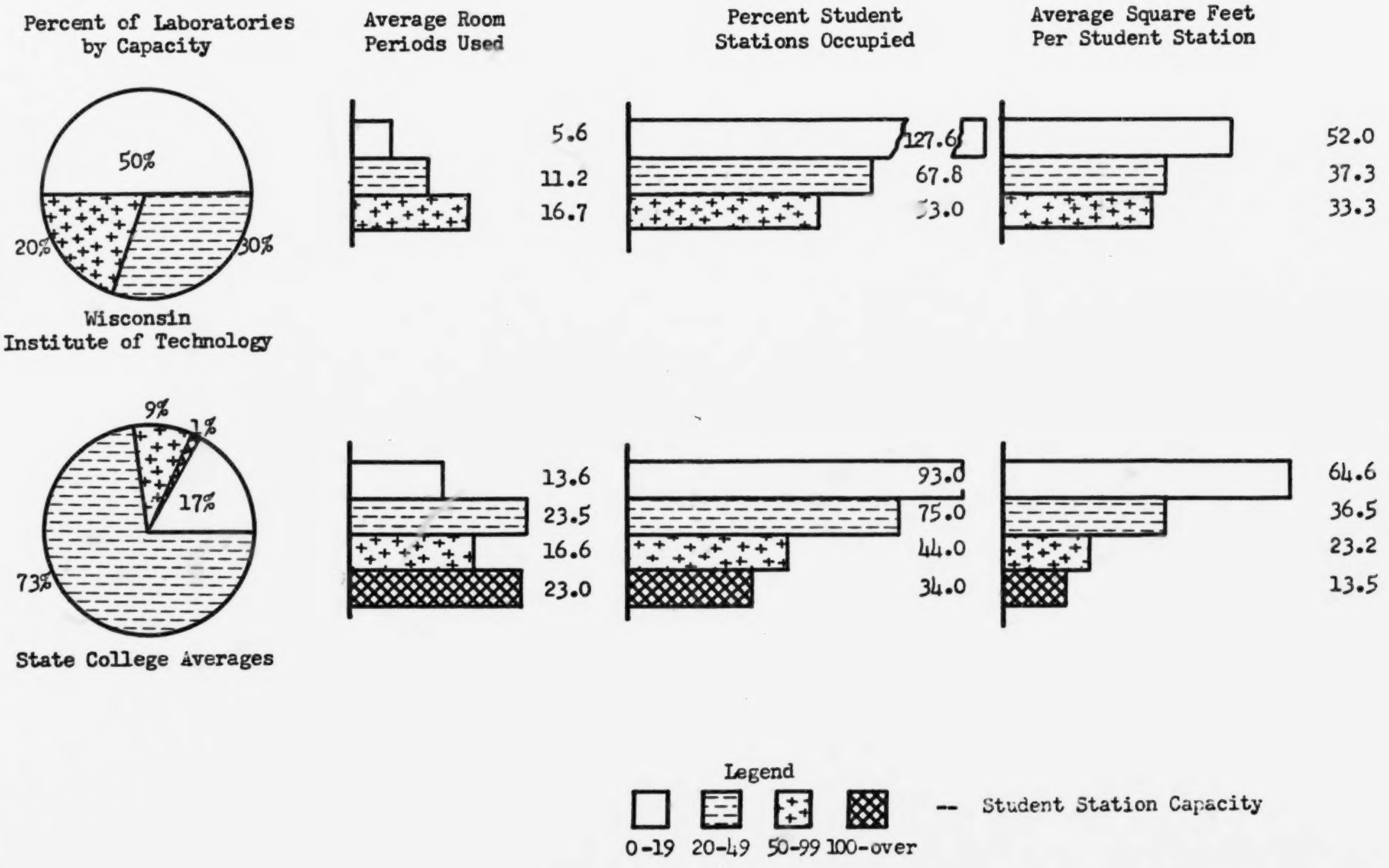
WEEKLY UTILIZATION OF LABORATORIES BY STUDENT STATION CAPACITY AT WISCONSIN STATE COLLEGES AND UNIVERSITY



C H A R T 42

WEEKLY UTILIZATION OF LABORATORIES BY STUDENT STATION CAPACITY AT WISCONSIN STATE COLLEGES AND UNIVERSITY

Fall 1958



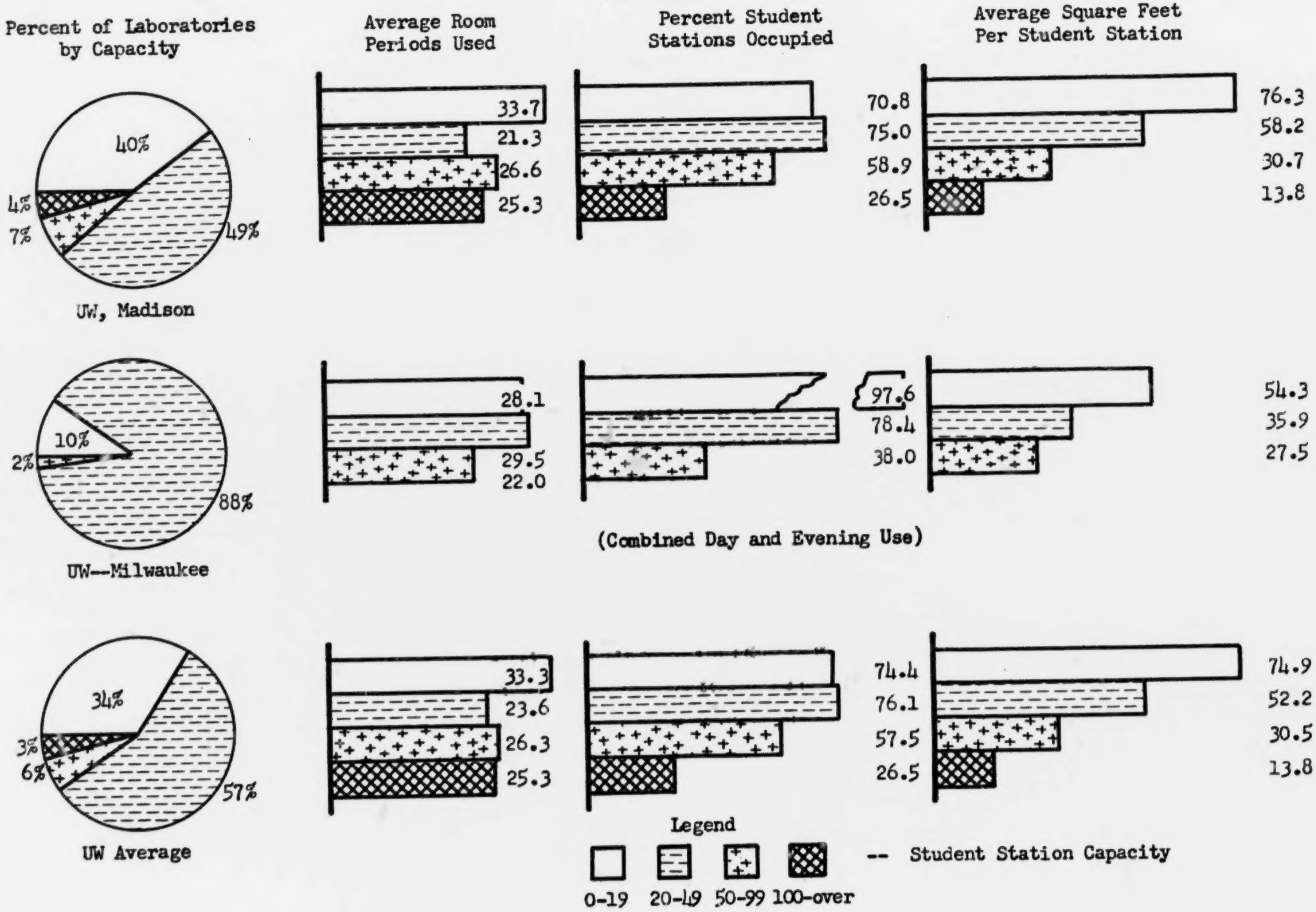
Legend

☐ 0-19 ▤ 20-49 ⊞ 50-99 ▩ 100-over -- Student Station Capacity

C H A R T 43

WEEKLY UTILIZATION OF LABORATORIES BY STUDENT STATION CAPACITY AT WISCONSIN STATE COLLEGES AND UNIVERSITY

Fall 1958



Analysis of Utilization by Distribution During Scheduled Periods and Type of Laboratories

Per Cent of Room Period Use of 100 Per Cent Laboratories (Charts #44-55). There was a very even distribution of laboratory room periods used throughout most of the scheduled day in 1958. Seventy per cent of the state colleges and both the University of Wisconsin, Madison and Milwaukee have 10 or more laboratory periods per day. River Falls and Superior have evening periods as do Madison and Milwaukee. Thirty per cent of the state colleges had Saturday classes in 1958; namely, Eau Claire, Platteville and Whitewater.

Since the 1956 study, a great improvement in scheduling is evident in nearly every institution. Besides the addition of Saturday and evening periods, many schools have lengthened their day by one additional period or more evenly distributed its use. A comparison of the room period use at La Crosse State College in 1956 and 1958 indicates a definite improvement in the use of facilities on Friday afternoons. Oshkosh made use of its noon hour period in 1958, and Wisconsin Institute of Technology lengthened its day by scheduling more morning periods. The University of Wisconsin--Milwaukee added one period earlier in the morning. This period showed light use but enabled them to utilize 15 periods instead of 14. The University of Wisconsin--Milwaukee shows a much heavier use of the early and regular evening periods in 1958.

CHART 44

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES AT EAU CLAIRE STATE COLLEGE[1]

Fall, 1958

14 Laboratories

Period	M	T	W	TH	F	S
1	57	71	57	71	29	0
2	64	86	71	93	36	7
3	50	64	21	71	57	7
4	50	64	36	71	50	7
5	29	43	29	50	14	7
6	57	79	64	71	43	0
7	71	86	79	86	43	0
8	50	71	57	71	14	0
9	36	43	43	43	14	0
10	21	21	21	29	0	0

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[1] These represent rooms which are used for laboratory purposes only. Rooms which served more than one function are excluded.

CHART 45

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES AT LA CROSSE STATE COLLEGE

Fall, 1958

10 Laboratories

Period	M	T	W	TH	F	S
1	40	50	50	40	10	0
2	50	60	50	50	20	0
3	80	60	80	60	20	0
4	70	60	80	70	20	0
5	50	70	50	80	10	0
6	70	70	70	70	20	0
7	50	60	50	60	40	0
8	40	70	50	70	40	0
9	50	70	60	70	40	0
10	60	60	60	50	10	0

C H A R T 46

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES AT OSHKOSH STATE COLLEGE

Fall, 1958

16 Laboratories

Period	M	T	W	TH	F	S
1	44	19	50	19	25	0
2	50	25	69	25	19	0
3	31	31	38	31	6	0
4	19	75	19	75	19	0
5	6	56	6	56	6	0
6	6	13	6	13	6	0
7	19	25	81	38	44	0
8	19	25	69	38	63	0
9	25	56	44	63	13	0
10	25	56	38	56	0	0

CHART 47

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES AT PLATTEVILLE STATE COLLEGE

Fall, 1958

22 Laboratories

Period	M	T	W	TH	F	S
1	23	64	23	64	9	9
2	27	64	23	64	14	9
3	27	59	32	68	18	9
4	32	55	32	64	23	0
5	5	9	5	9	5	0
6	5	14	9	9	5	0
7	32	41	36	36	14	0
8	45	45	55	50	27	0
9	50	64	45	68	32	0
10	14	27	14	45	5	0

CHART 48

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES AT RIVER FALLS STATE COLLEGE

Fall, 1958

15 Laboratories

Period	M	T	W	TH	F	S
1	60	67	60	67	60	0
2	40	87	60	67	40	0
3	27	20	33	7	33	0
4	33	70	37	60	33	0
5	33	60	33	60	27	0
6	53	47	60	60	47	0
7	53	60	53	53	33	0
8	53	47	60	33	40	0
9	47	13	53	27	10	0
10	7	7	13	10	0	0
11	7	10	0	10	0	0
12	7	7	0	0	0	0
13	7	7	0	0	0	0
14	3	3	0	0	0	0

CHART 49

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES
AT STEVENS POINT STATE COLLEGE

Fall, 1958

15 Laboratories

Period	M	T	W	TH	F	S
1	53	53	67	47	60	0
2	47	67	67	60	60	0
3	60	53	67	53	67	0
4	33	73	67	73	60	0
5	40	20	47	20	40	0
6	40	20	40	20	26	0
7	47	67	53	60	33	0
8	40	67	47	67	33	0
9	33	67	27	60	20	0
10	7	53	0	40	0	0

CHART 50

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES AT STOUT STATE COLLEGE

Fall, 1958

25 Laboratories

Period	M	T	W	TH	F	S
1	52	60	60	60	56	0
2	56	52	52	56	52	0
3	60	80	28	80	56	0
4	52	76	48	72	64	0
5	20	28	20	24	16	0
6	44	36	44	40	48	0
7	52	56	56	60	60	0
8	68	68	68	68	68	0
9	48	60	44	60	36	0
10	20	20	24	20	20	0

CHART 51

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES
AT SUPERIOR STATE COLLEGE

Fall, 1958

8 Laboratories

Period	M	T	W	TH	F	S
1	25	38	25	38	38	0
2	38	25	25	13	50	0
3	38	50	38	38	25	0
4	13	50	25	38	50	0
5	13	25	0	25	13	0
6	38	13	25	38	13	0
7	75	75	75	75	50	0
8	75	88	63	100	50	0
9	50	25	25	25	13	0
10	0	0	0	0	0	0
11	0	0	0	0	0	0
12	13	13	13	13	0	0
13	13	13	13	13	0	0
14	13	0	13	13	0	0

CHART 52

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES AT WHITEWATER STATE COLLEGE

Fall, 1958

14 Laboratories

Period	M	T	W	TH	F	S
1	64	43	71	43	43	14
2	14	21	79	21	21	14
3	36	0	50	0	50	0
4	50	57	71	57	71	0
5	7	7	29	7	29	0
6	29	36	14	36	14	0
7	21	71	21	71	21	0
8	50	57	50	57	50	0
9	36	36	21	29	29	0

CHART 53

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES AT WISCONSIN INSTITUTE OF TECHNOLOGY

Fall, 1958

10 Laboratories

Period	M	T	W	TH	F	S
1	20	0	10	0	10	0
2	30	40	20	30	20	0
3	10	40	10	40	20	0
4	10	40	0	30	10	0
5	5	15	0	15	10	0
6	60	70	40	35	35	0
7	60	80	50	40	40	0
8	40	80	40	40	40	0
9	20	35	15	10	15	0

C H A R T 54

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES AT THE UNIVERSITY OF WISCONSIN, MADISON

Fall, 1958

165 Laboratories

Period	M	T	W	TH	F	S
1	38	34	44	34	29	13
2	45	46	52	48	39	14
3	45	44	50	46	42	12
4	42	37	42	38	34	6
5	5	6	4	9	3	0
6	47	47	47	47	31	1
7	64	67	64	62	41	2
8	54	62	53	55	30	3
9	41	40	42	34	21	3
10	1	3	1	3	0	0
11	4	5	5	2	0	0
12	5	5	5	2	0	0
13	5	5	5	2	0	0

CHART 55

PERCENT OF ROOM PERIOD USE OF 100% LABORATORIES AT U-W MILWAUKEE

Fall, 1958

42 Laboratories

Period	M	T	W	TH	F	S
1	5	12	5	5	2	2
2	64	55	64	57	55	7
3	62	60	62	64	52	10
4	67	76	67	76	50	12
5	62	62	62	62	55	2
6	43	21	40	29	26	0
7	52	60	55	62	31	0
8	64	69	64	69	38	0
9	60	52	62	52	40	0
10	26	38	26	32	10	0
11	17	14	17	14	2	0
12	21	26	26	24	1	0
13	33	33	38	33	1	0
14	31	33	31	29	1	0
15	26	26	26	24	0	0

Scheduled Utilization by Type of Laboratory (Chart #56-65). Laboratories vary greatly in type of equipment needed for the specific course they are intended to serve. Some are of a general nature and may be used by several different courses in a particular field. Others are highly specialized and are needed for the curriculum but may be used for only one course. High utilization of this latter type of laboratory is not possible. In this section, laboratory utilization has been broken down into ten classifications: Art, Biology, Chemistry, Drawing (Mechanical), Geography, Home Economics, Music, Physics, Technical Laboratories and Other.

Art Laboratories represent 9 per cent of the total laboratories at Wisconsin institutions. Approximately half of these laboratories are at the state colleges and the others evenly divided between the University of Wisconsin--Milwaukee and Madison. Many of the Art laboratories at the University of Wisconsin, Madison are used above their intended capacity, resulting in over 100 per cent utilization in the overall picture. Oshkosh, River Falls and Superior also have a high percent of student stations occupied.

All of the state colleges except Wisconsin Institute of Technology have Biology laboratories. Oshkosh and Whitewater have four in this classification and the others have an average of two per school. Zoology, Physiology and Botany laboratories are also in this classification at the University of Wisconsin. There is a close similarity between room period use, percent of student stations occupied and square feet per student station at the majority of the Wisconsin institutions. Generally speaking, the Biology laboratories, representing 13 per cent of the total number, have approximated the laboratory utilization standards recommended in the 1956 Physical Facilities Study.

Eleven per cent of the total number of laboratories are used for Chemistry. This is an average of 2.5 for the state colleges, 7 at the University of Wisconsin--Milwaukee and 17 at the University of Wisconsin, Madison. Special Chemistry laboratories at Oshkosh and Whitewater perhaps account for their low room period use. Laboratory preparation and cleanup time are needed for Chemistry courses, thus cutting down the scheduled use. Make up time and individual work also requires additional room period use. The University of Wisconsin--Milwaukee indicates a very high room period and per cent of student station use for all science laboratories. The University of Wisconsin at both campuses averages approximately six square feet more per student station for Chemistry laboratories than do the state colleges.

Mechanical or Engineering Drawing laboratories are found at seven state colleges and University of Wisconsin--Milwaukee and Madison. The state colleges average one per school. The two drawing laboratories at Stout are used the highest number of room periods with over 100 per cent capacity. Both the state college and University averages exceed the recommended standards. The median square feet per student station is 47.2 for the drawing laboratories. The University of Wisconsin--Milwaukee utilizes their student stations 94.5 per cent with approximately 30 square feet per student station.

One Geography or Geology laboratory is found at six of the state colleges and two-thirds of the total laboratories in this classification are at the University of Wisconsin. A great variance is evident in the room period use and per cent of student stations occupied at the individual institutions, but the University and state college total room period averages are both 23.8. Superior's Geology laboratory was used above 100 per cent capacity in 1958. These laboratories contain approximately 26 square feet per student station.

The Home Economics laboratories, representing 7 per cent of the total number of laboratories are evenly divided between the University of Wisconsin, Madison and the state colleges. Stout State College and the University of Wisconsin, Madison account for approximately 80 per cent of the Home Economics laboratories. The average room periods used per week in this classification are 16 with over 82 per cent utilization for the scheduled periods. The state colleges average 43 square feet per student station, with the University of Wisconsin, Madison slightly higher.

An average of two music laboratories for each are found at nine state colleges and the University of Wisconsin--Milwaukee. The University of Wisconsin, Madison has 50 per cent of the total number of music laboratories. Many of the music laboratories are used for individual practice, as well as scheduled laboratory periods. In some instances these laboratories are shared with the laboratory school, or sometimes the auditorium is used for large rehearsals. The state college average square feet per student station is 18 with the University average being lower. The room period use for music laboratories ranges from three at Stout to 19.5 at the University of Wisconsin--Milwaukee. Only Platteville and Superior indicate better than 80 per cent utilization of music laboratories.

A Physics laboratory is found in every state college, with the University of Wisconsin representing 50 per cent of the total number. Less than 32.5 (state college average) square feet per student station is found in the laboratories at six state colleges and the University of Wisconsin--Milwaukee. Four have more than the average of 32.5 square feet per student station. However, these laboratories have less square feet per student station that the laboratories at the University of Wisconsin, Madison. The large square feet per student station is accounted for by the fact that advanced laboratories require large equipment. The room period use of Physics laboratories is rather low, but the per cent of student stations occupied is very high at the majority of institutions.

Technical laboratories housing large equipment require considerably more area per student station than other types of laboratories. This category consists of Engineering and Industrial Education laboratories. These represent 14 per cent of the total laboratories and are found at five state colleges, and the University of Wisconsin--Milwaukee and Madison. (The Electrical Engineering laboratory at the Wisconsin Institute of Technology was not used the first semester of 1958). One-half of the state college shops are at Stout and more than one-half of all the Technical laboratories are at the University of Wisconsin, Madison. There is a great variance in usage at the individual institutions. In many instances, these laboratories are highly specialized for the particular course they serve. In the College of Engineering, Madison, many of these instructional laboratories are also used for research purposes.

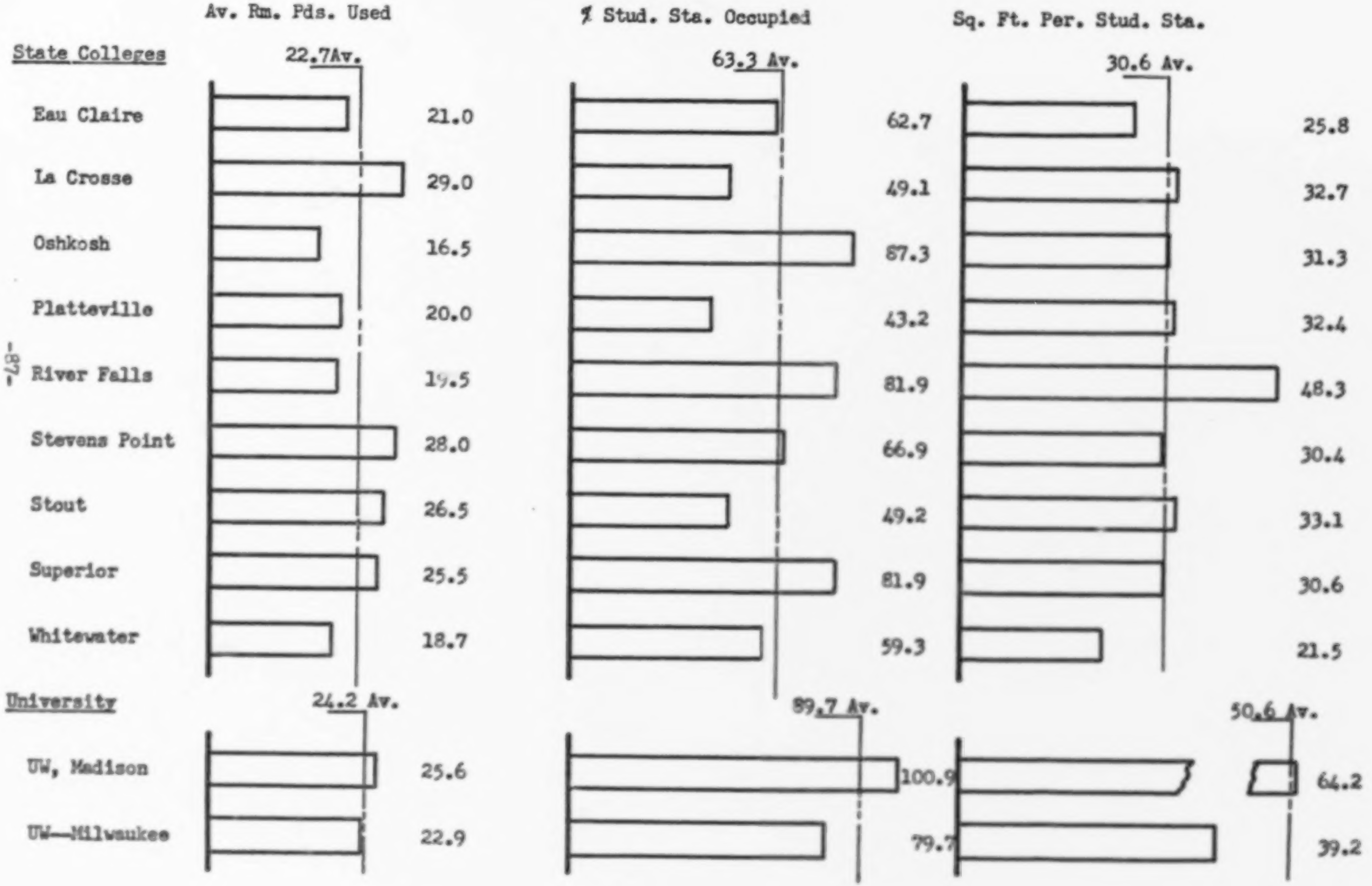
Twenty-two percent of the instructional laboratories are classified as "Other". These include: Commerce, Audio-Visual, Agriculture, Education, Conservation, Journalism, etc., but since they did not occur in the majority of institutions these were not broken out into separate categories. There is little similarity between the types of laboratories in each school but it is interesting to note that the dark room at Oshkosh with four student stations is occupied by three times that many students during the scheduled periods.

The break down of laboratory utilization by the various functions helps us to more clearly understand the laboratory situation at each institution. Highly specialized laboratories, necessary for the curriculum, often result in less room period use and require a large area per student station. Laboratory courses in the sciences have many hours of use, which do not show up in the regularly scheduled room period use because of the need for preparations in setting up experiments. Certain other laboratories also have many periods of individual student work which are not indicated by scheduled periods. The greatest scheduled room period use was found in drawing laboratories and the highest all-institutional per cent of student stations occupied was from Home Economics laboratories. The University of Wisconsin exceeded this per cent of student stations occupied for Art, Physics and Biology laboratories.

CHART 56

WEEKLY UTILIZATION OF SCHEDULED ART LABORATORIES AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN

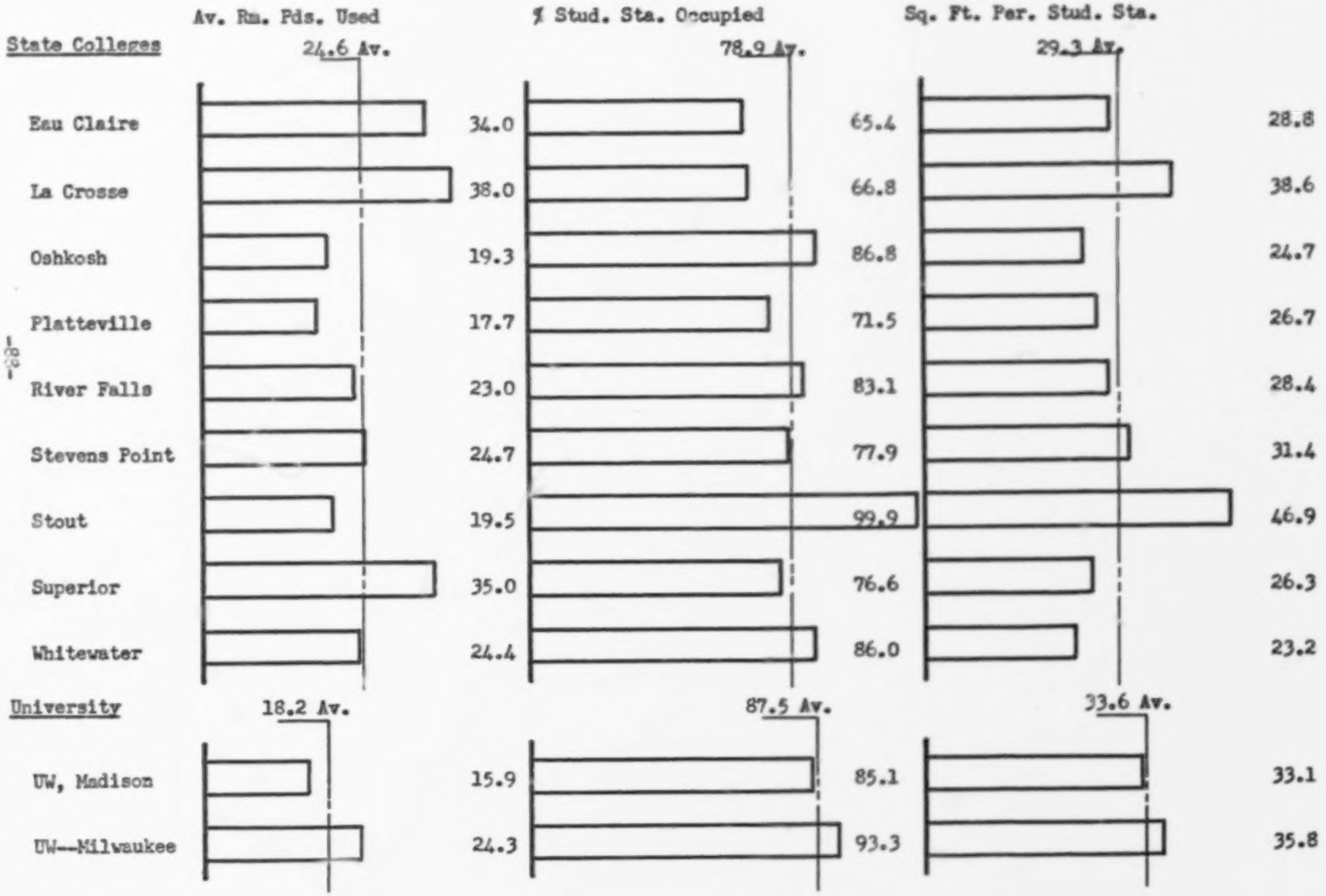
Fall, 1958



C H A R T 57

WEEKLY UTILIZATION OF SCHEDULED BIOLOGY AND PHYSIOLOGY LABORATORIES AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN

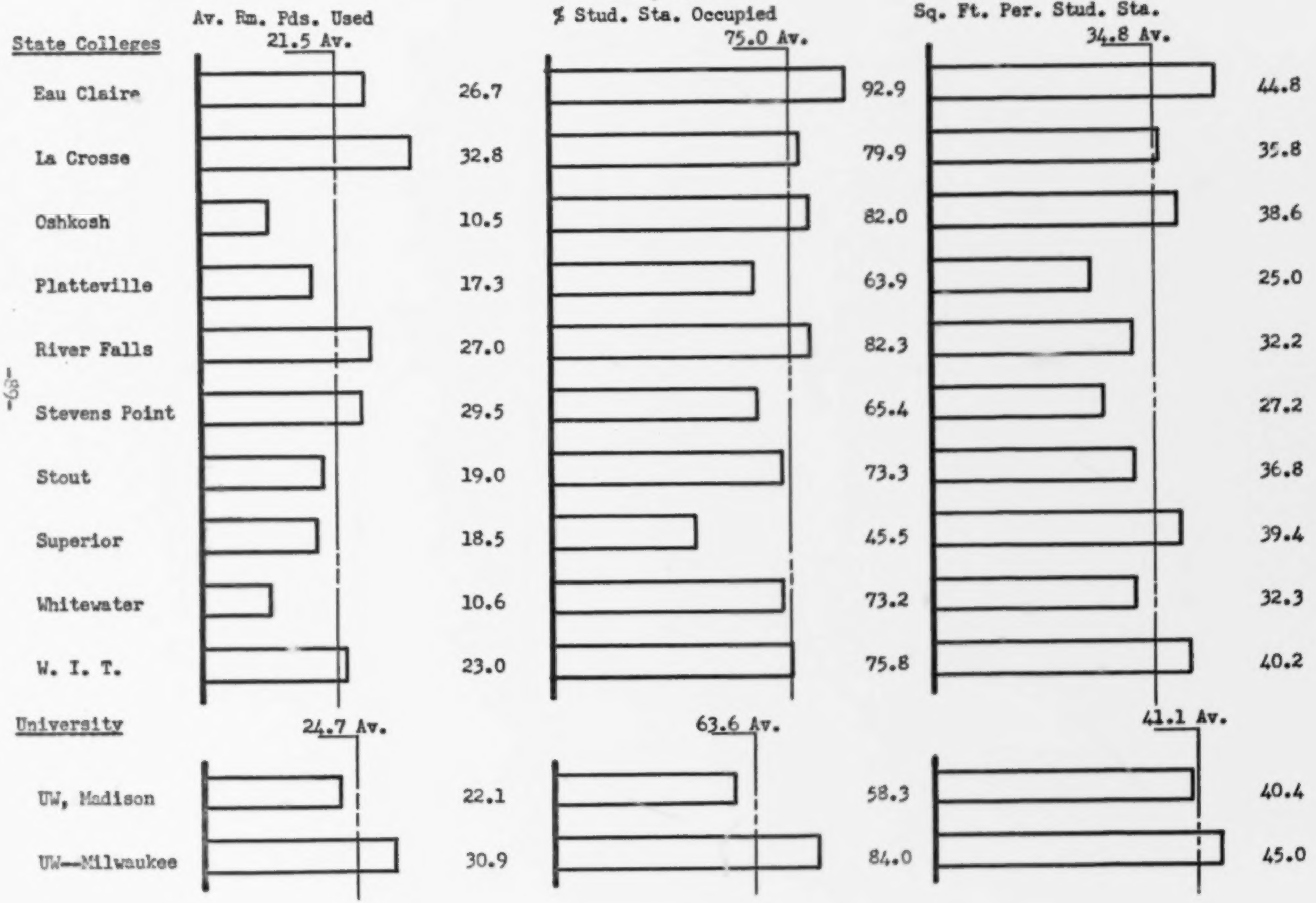
Fall, 1958



C H A R T 58

WEEKLY UTILIZATION OF SCHEDULED CHEMISTRY LABORATORIES AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN

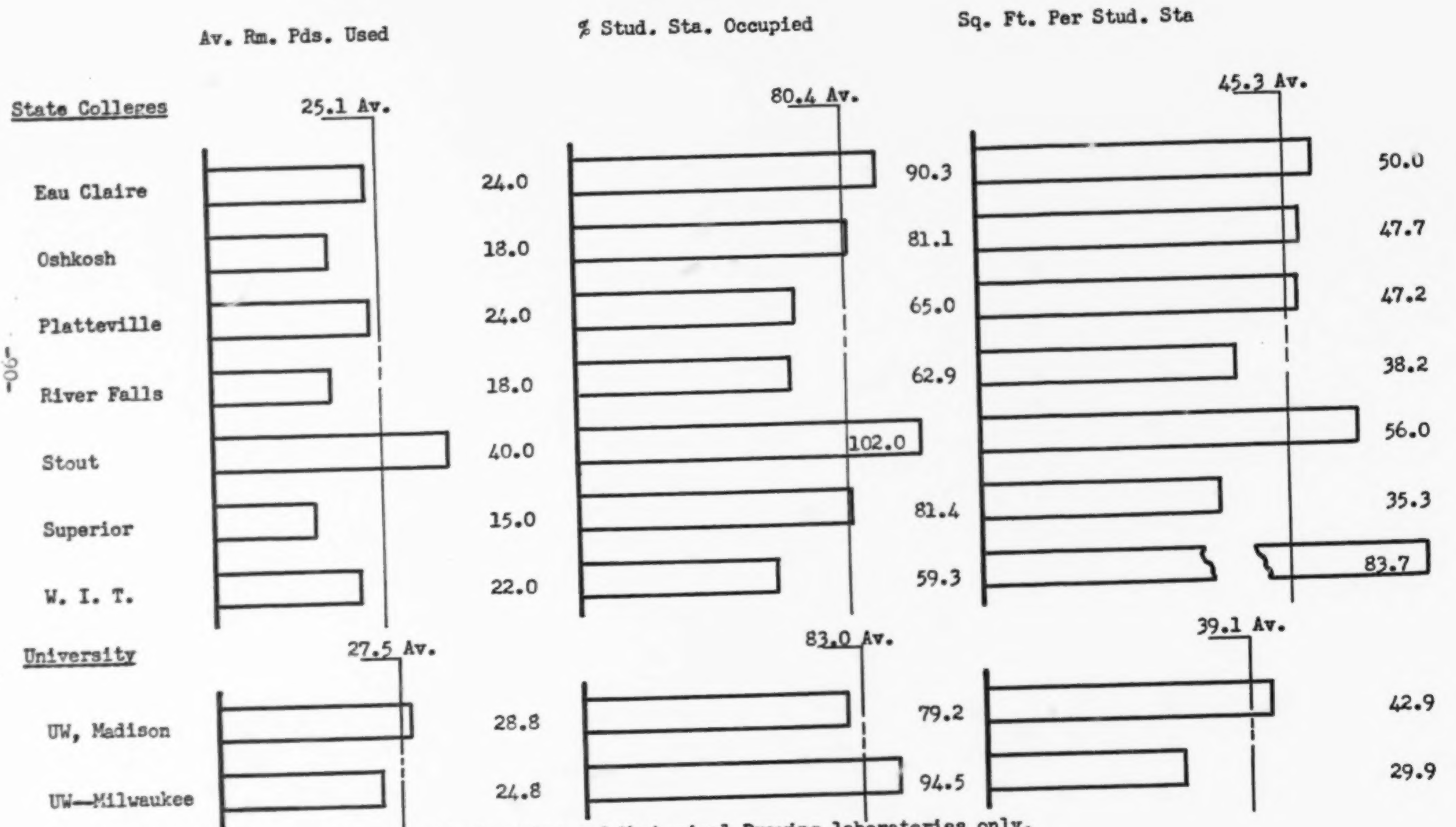
Fall, 1958



C H A R T 59

WEEKLY UTILIZATION OF SCHEDULED DRAWING LABORATORIES AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN *

Fall, 1958

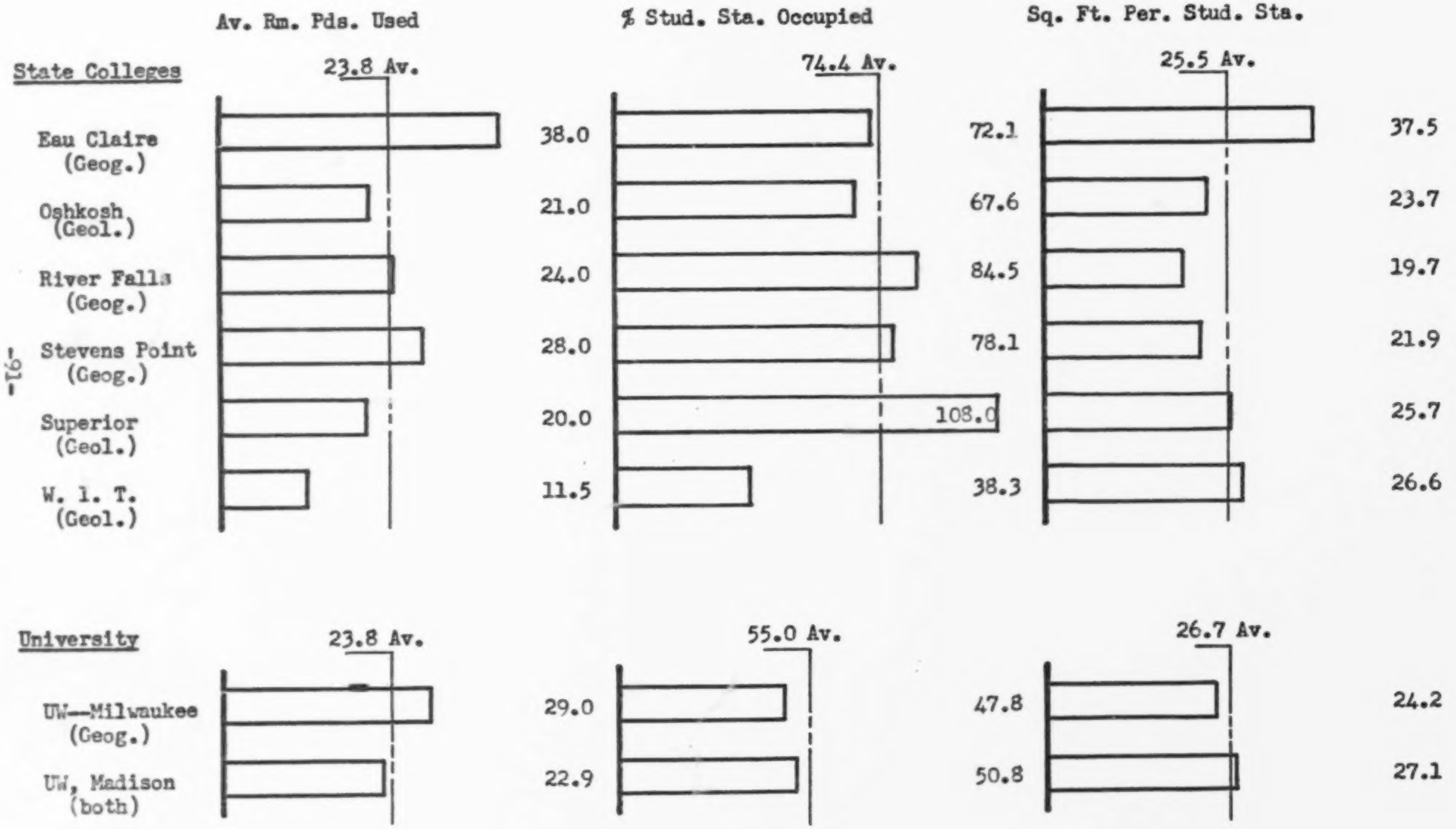


* Classified in this category are Engineering and Mechanical Drawing laboratories only.

C H A R T 60

WEEKLY UTILIZATION OF SCHEDULED GEOGRAPHY AND GEOLOGY LABORATORIES
AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN

Fall, 1958

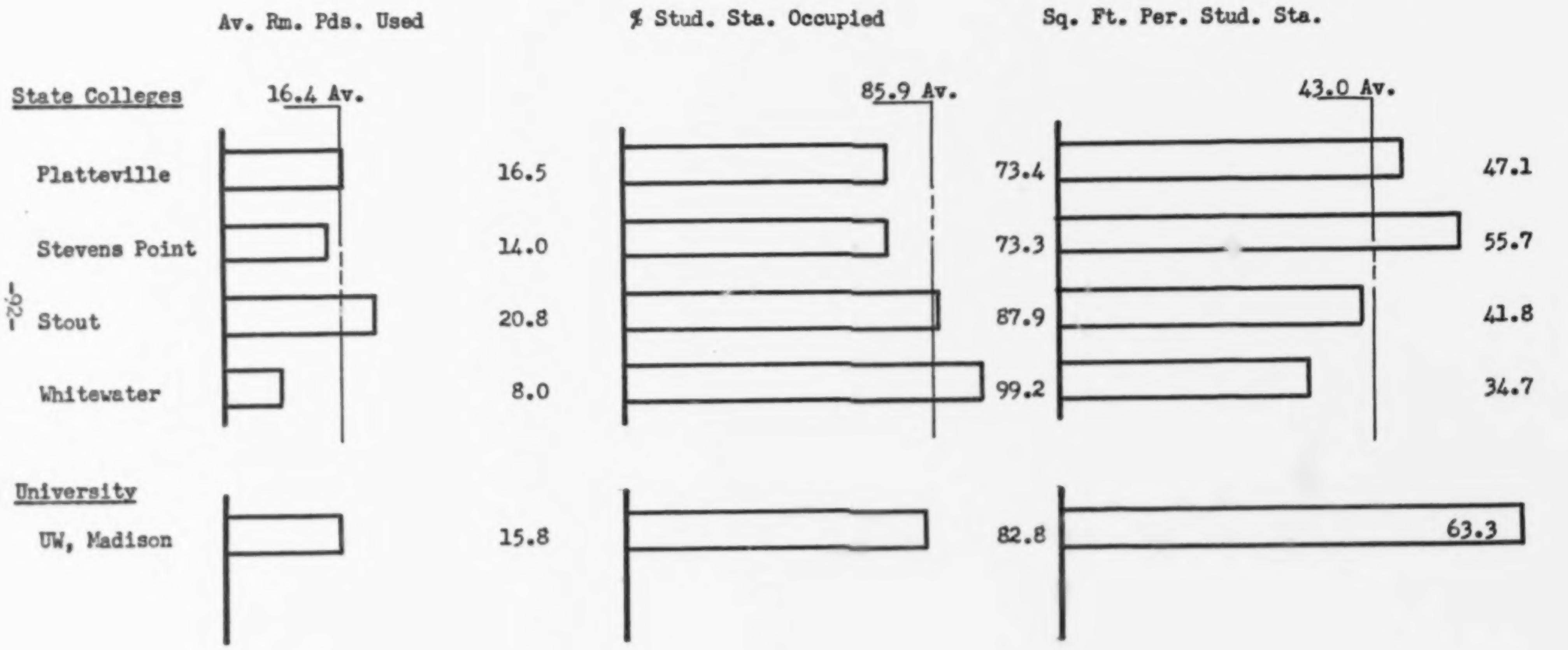


C H A R T 61

WEEKLY UTILIZATION OF SCHEDULED HOME ECONOMICS LABORATORIES

AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN

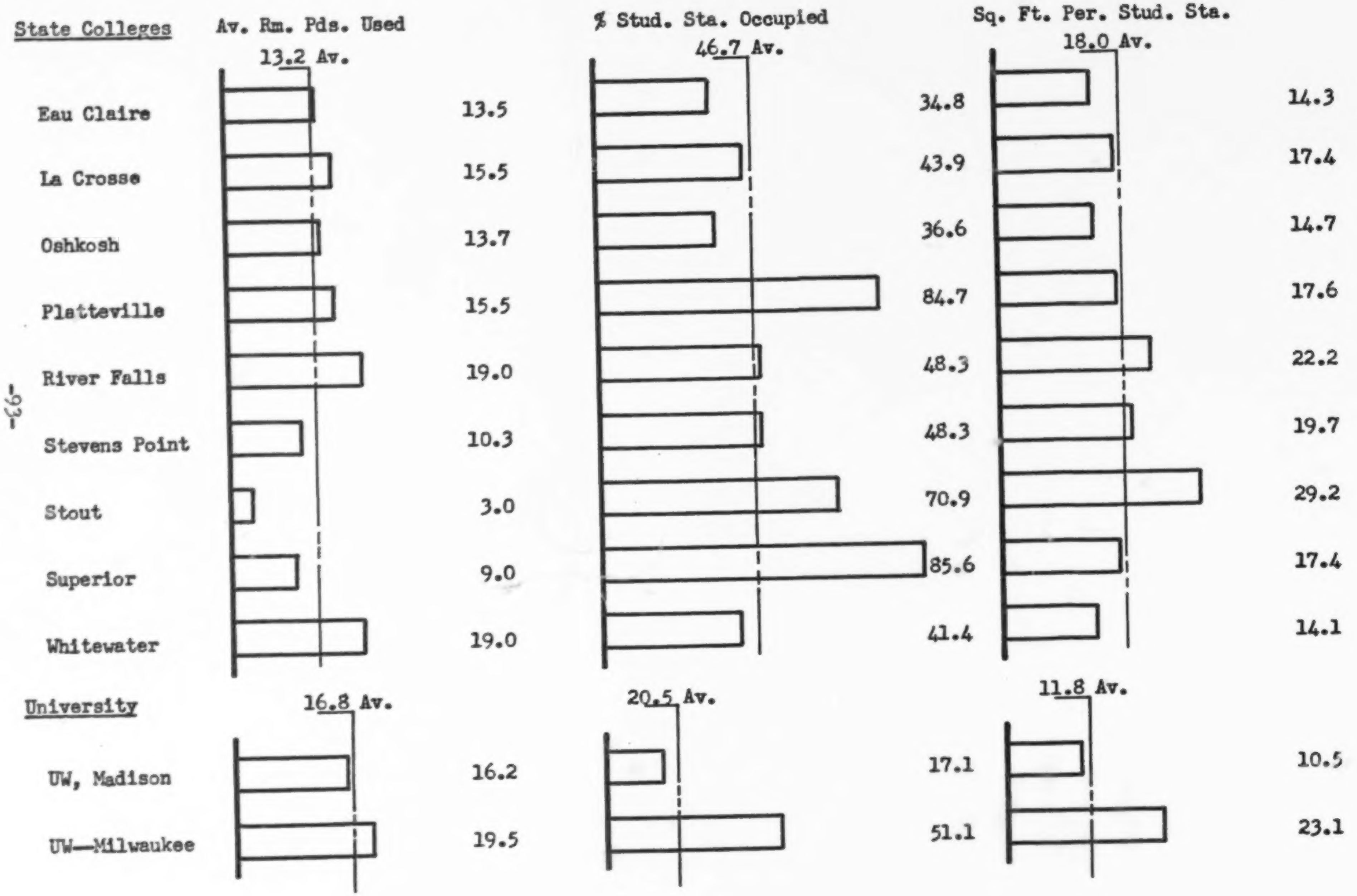
Fall, 1958



C H A R T 62

WEEKLY UTILIZATION OF SCHEDULED MUSIC LABORATORIES AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN

Fall, 1958



C H A R T 63

WEEKLY UTILIZATION OF SCHEDULED PHYSICS LABORATORIES AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN

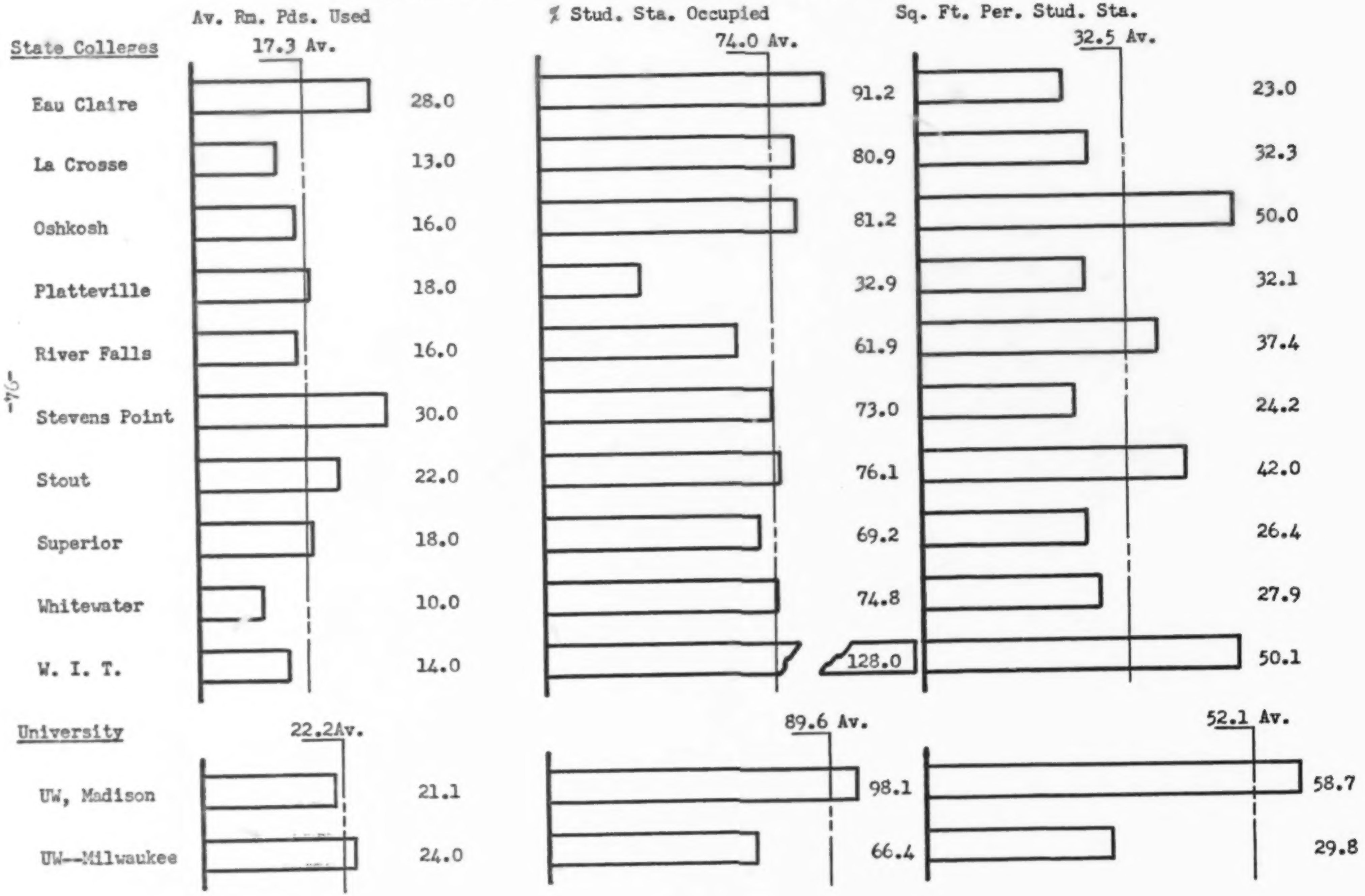
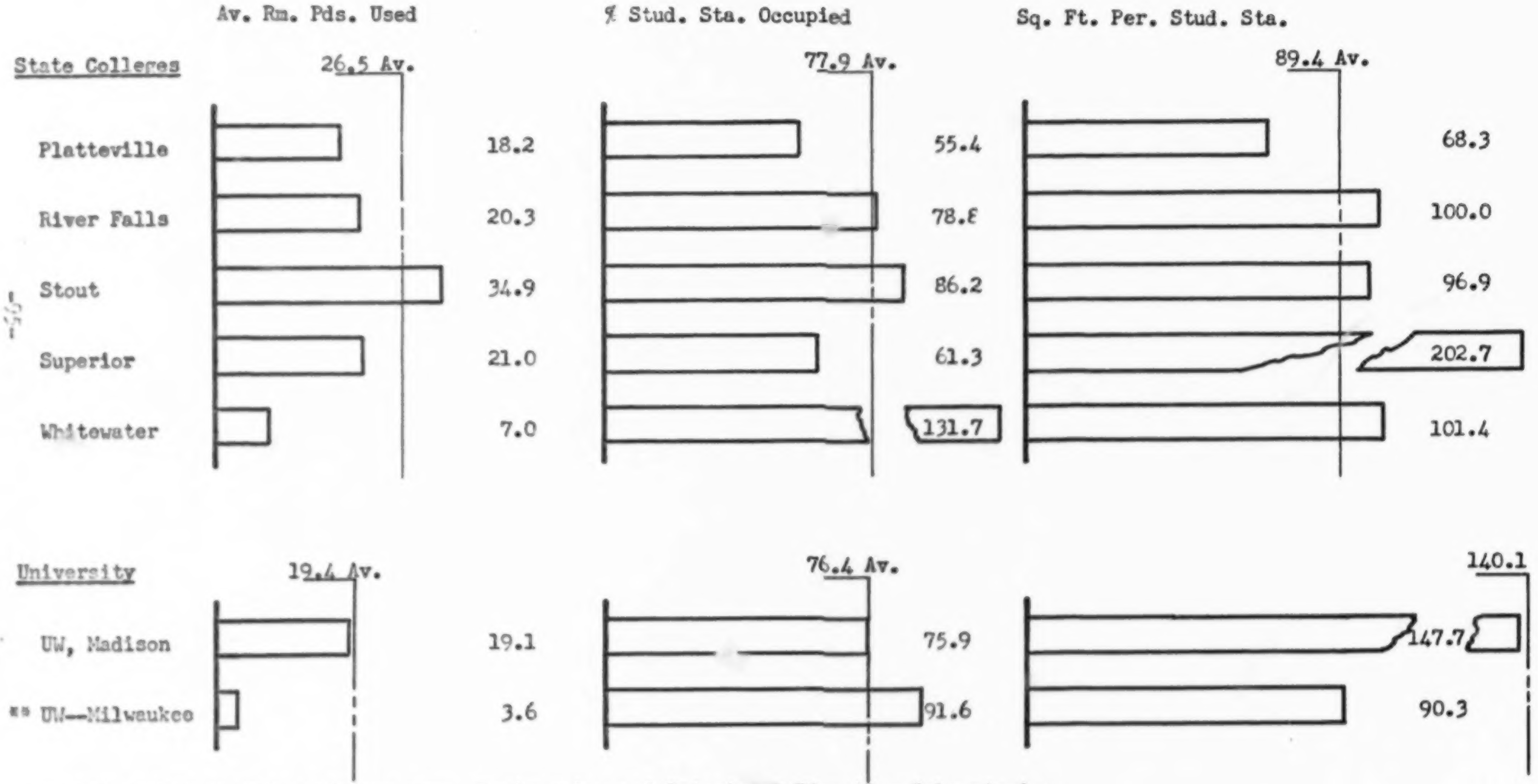


CHART 64

WEEKLY UTILIZATION OF SCHEDULED TECHNICAL LABORATORIES AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN *

Fall, 1958

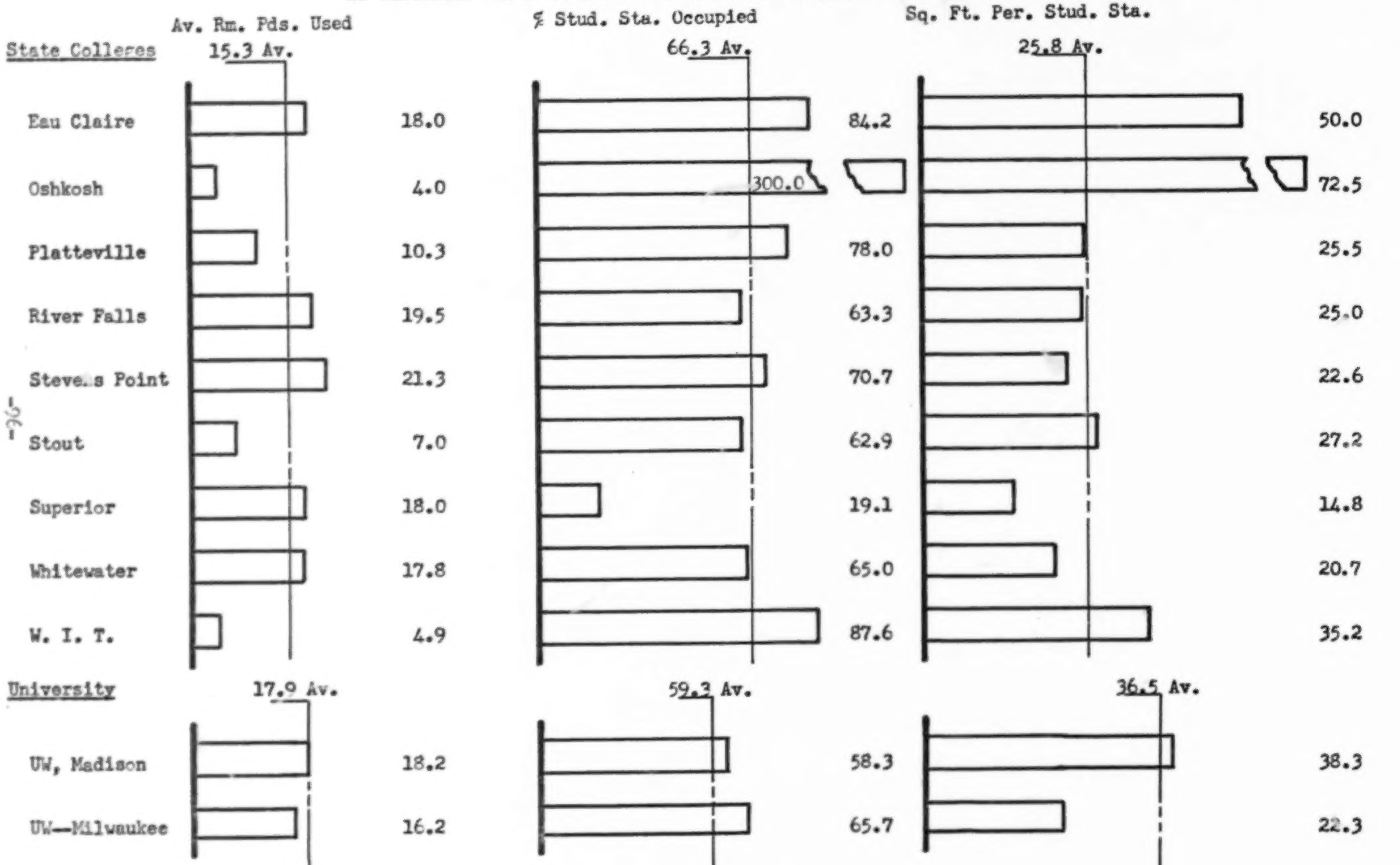


* Classified in this category are: Engineering and Industrial Education Laboratories.

** Includes rented laboratories at Milwaukee Vocational School.

C H A R T 65

WEEKLY UTILIZATION OF SCHEDULED OTHER LABORATORIES AT WISCONSIN STATE COLLEGES AND THE UNIVERSITY OF WISCONSIN *



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* Classified in this category are Commerce, Audio-Visual, Agriculture, Education, Conservation, Journalism (radio & t.v.) Laboratories.

Laboratory Utilization, Fall 1956 and 1958

A Comparison of Associated Factors Concerning Utilization of Regularly Scheduled Laboratories. (Charts #66-77). The Comparison Charts for Fall 1956 and 1958 indicate the effect of the average number of room periods used per week and the number of student stations per room upon the per cent of student stations utilized. Laboratories, because of their highly specialized nature and split function use, do not fall into the same pattern as classrooms. The refinement of laboratory definition in the 1958 study, combining supplementary rooms with the laboratory,has increased the area per student station for some rooms. This makes it particularly difficult to compare the average number of student stations per room between the two studies.

All of the Wisconsin institutions have increased the average number of room periods used per week per room except the Wisconsin Institute of Technology, who accommodated less laboratory students per week in 1958 even though their enrollment increased 19 per cent. However, their classroom occupancy increased appreciably in this two year period. Apparently there has been a shift in the enrollments in the various curricula or changes in curricula which require less laboratory work. Superior State College slightly increased their room period use and per cent of student stations utilized, but accommodated less laboratory students per week because of a slight reduction in the number of student stations per room. Their classroom occupancy indicated a marked increase in this two year period, between studies.

The Wisconsin State College at Whitewater and the University of Wisconsin, Madison accommodated more students per week in their laboratories through an increase in room periods, number of student stations per room and by using more split-function rooms. This resulted in a decrease in the per cent of student stations occupied and a slight decrease in the average number of student stations utilized per week per room. In addition, increasing the number of student stations, has resulted in a very decided decrease in the average number of square feet per student station.

The University of Wisconsin--Milwaukee used six more laboratories in their evening program in 1958 than 1956, increasing their room period use and per cent of student stations occupied. During the day schedule, approximately ten per cent more student stations were utilized for each room per week. However, the overall total use was less per week since there had been a slight decrease in the average room periods used per week per room and a minor reduction in the average number of student stations per room.

The other seven schools all increased the number of room periods and average number of student stations occupied per week per room. Three of these schools also increased the number of student stations per room which resulted in a decrease in the per cent of student stations occupied.

In comparing the two studies the number of students accommodated per week per room in laboratories is not as great as the per cent of increase in number of students accommodated in classrooms. This of course varies with curriculum objectives at each institution. In addition, laboratories are not as flexible as classrooms in terms of adding more student stations per room. For example, Chemistry laboratory equipment must be added as each additional student is accommodated.

CHART 66

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT EAU CLAIRE STATE COLLEGE

Fall 1956 and Fall 1958

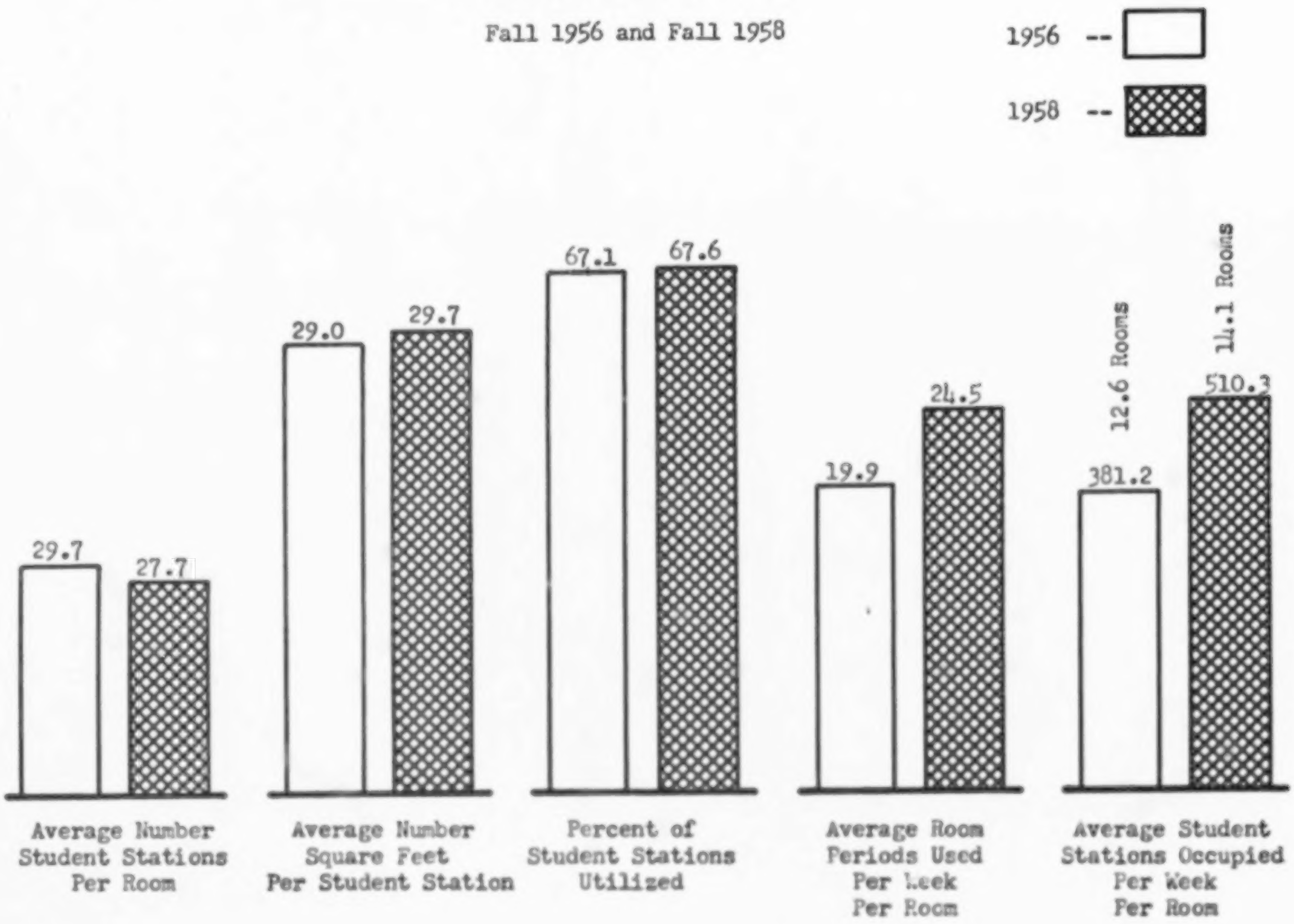


CHART 67

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT LA CROSSE STATE COLLEGE

Fall 1956 and Fall 1958

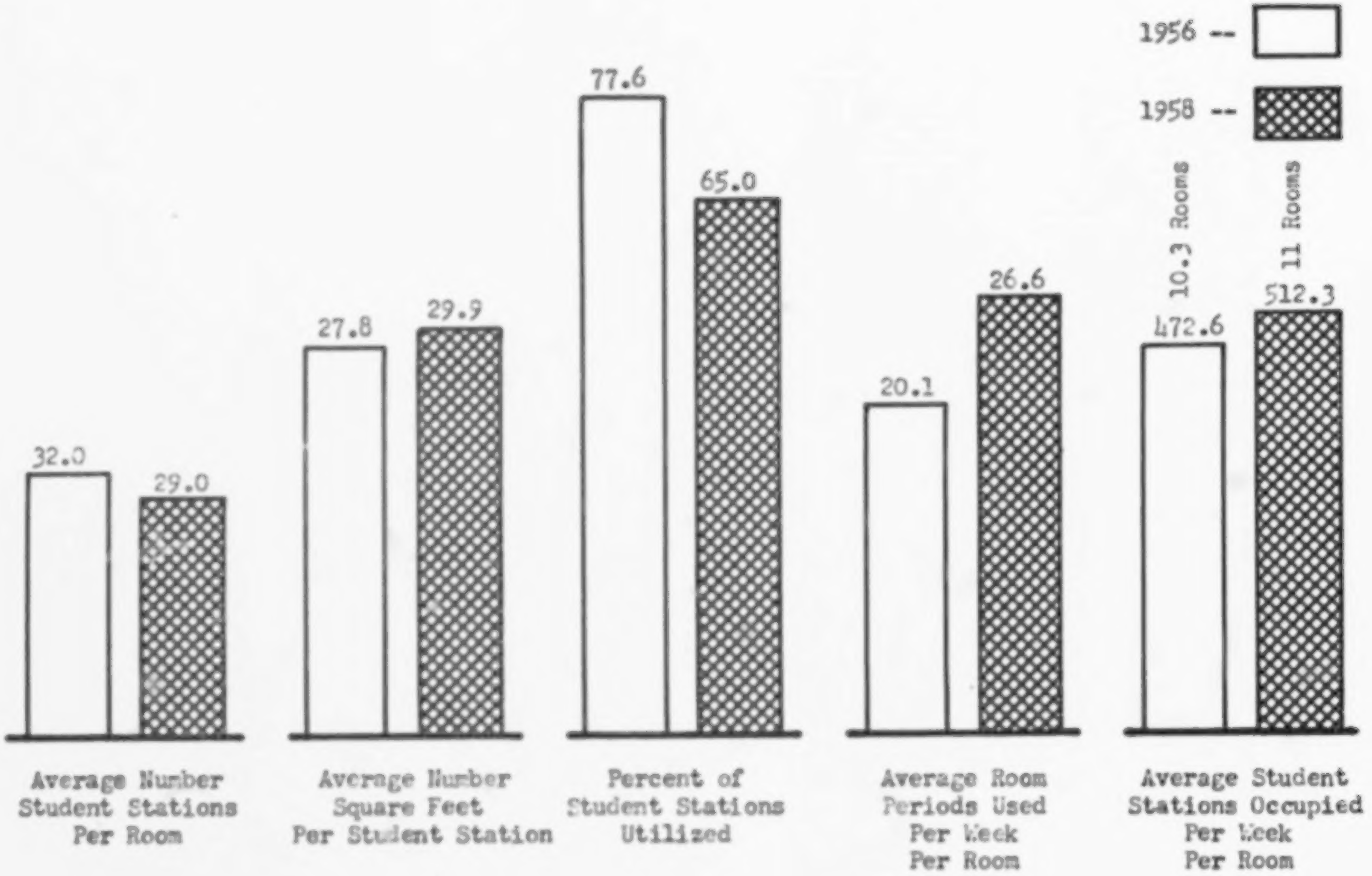


CHART 62

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT OSHKOSH STATE COLLEGE

Fall 1956 and Fall 1958

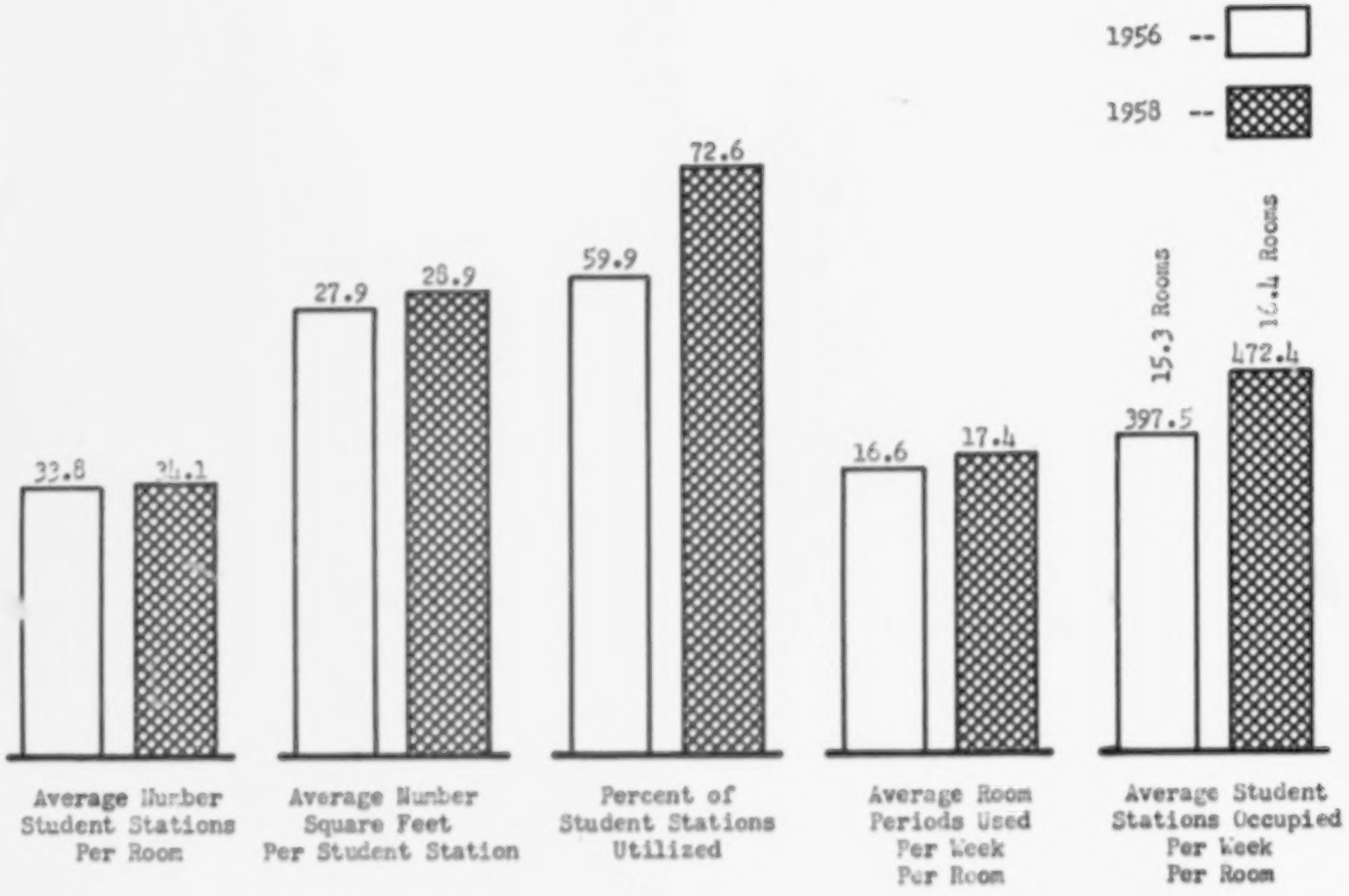
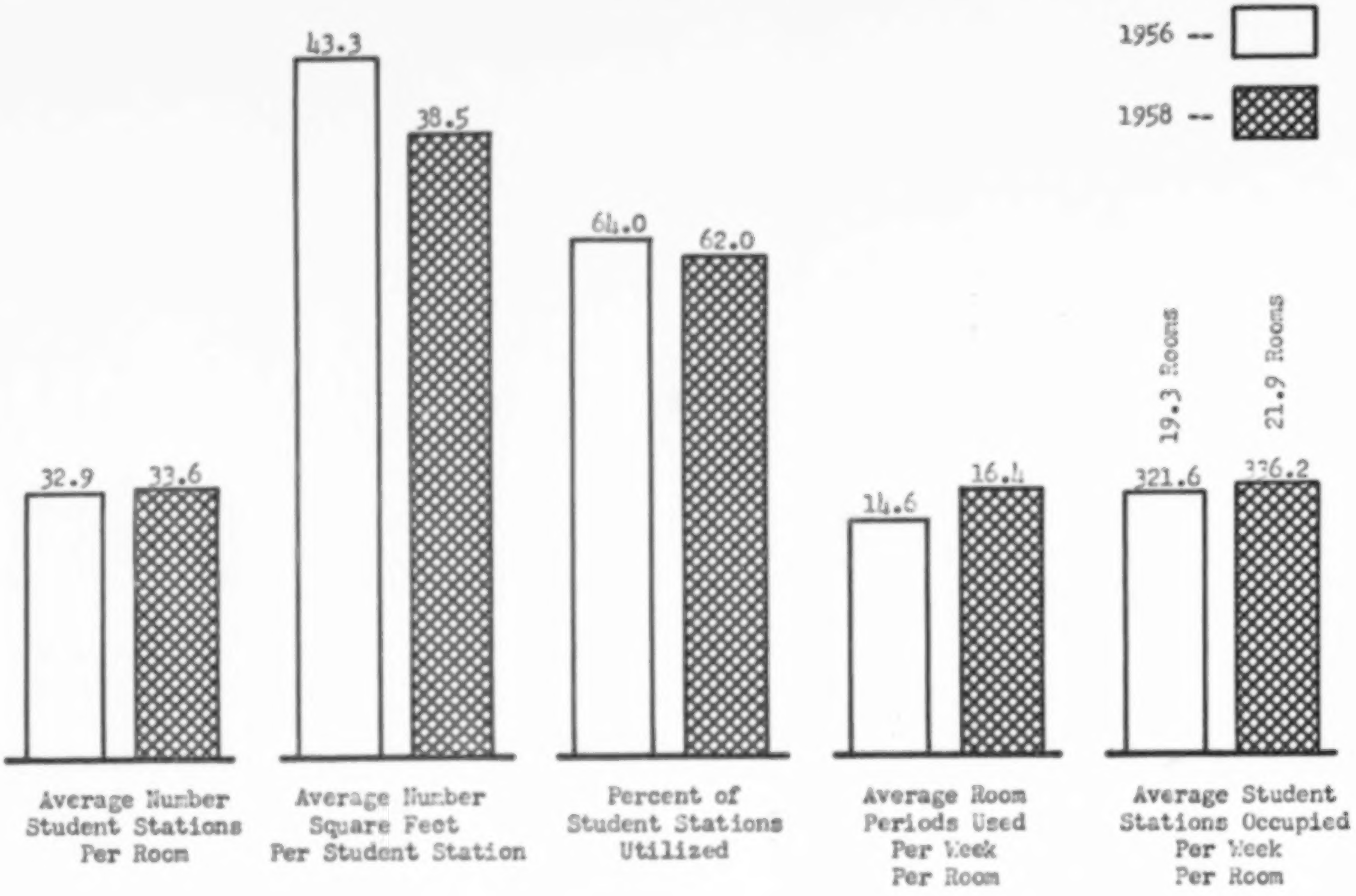


CHART 69

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT PLATTEVILLE STATE COLLEGE

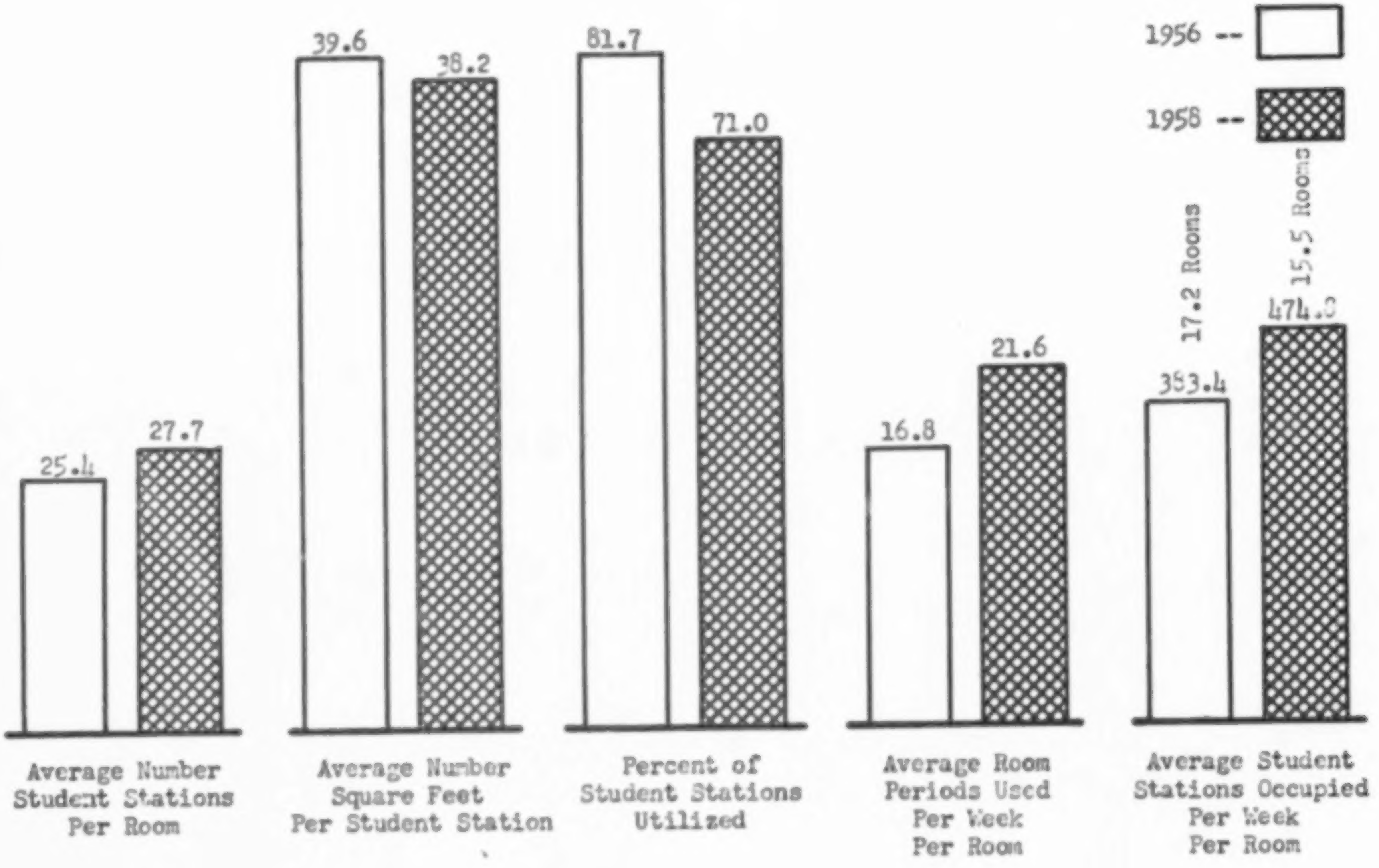
Fall 1956 and Fall 1958



C H A R T 70

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT RIVER FALLS STATE COLLEGE

Fall 1956 and Fall 1958



C H A R T 71

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT STEVENS POINT STATE COLLEGE

Fall 1956 and Fall 1958

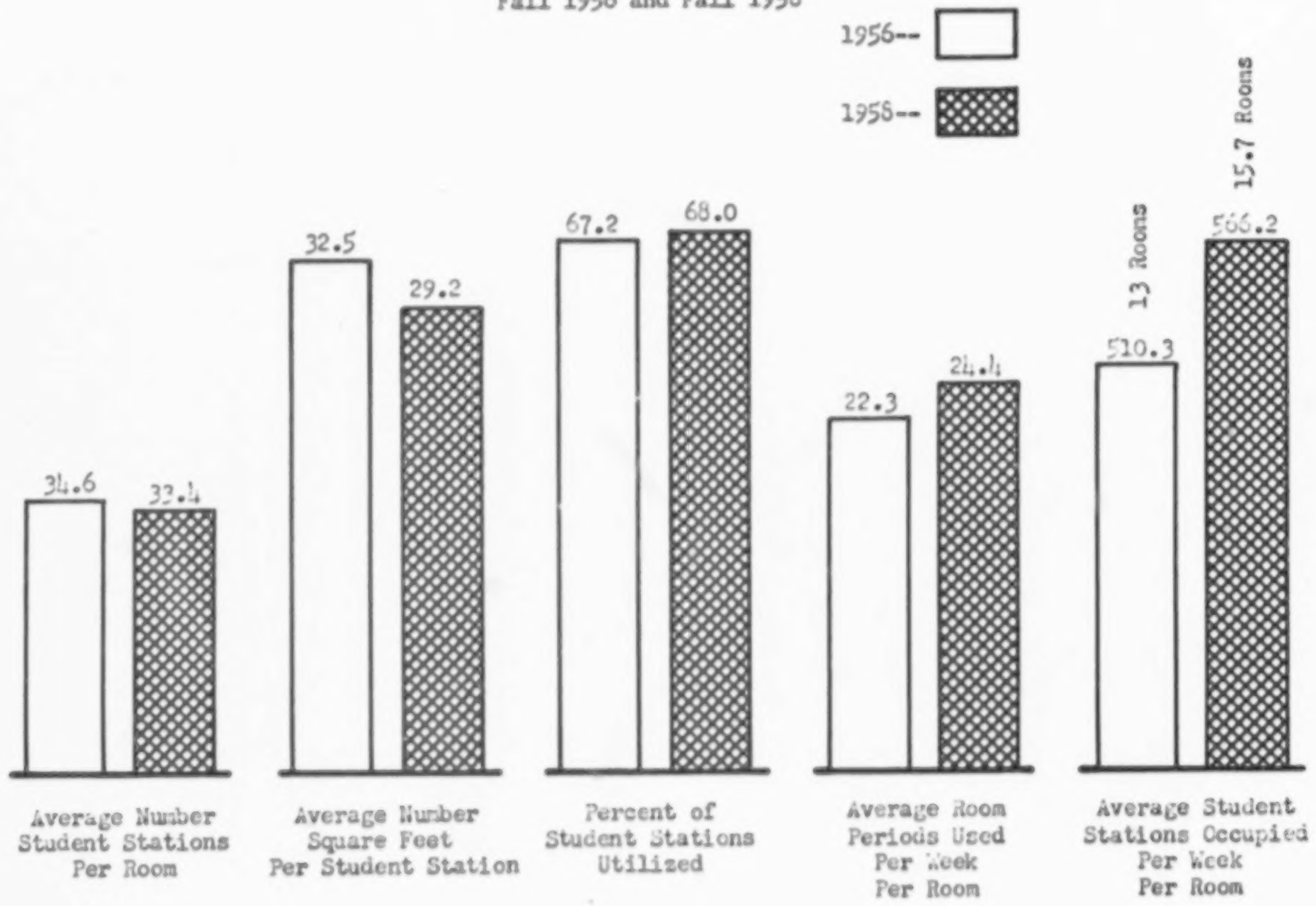
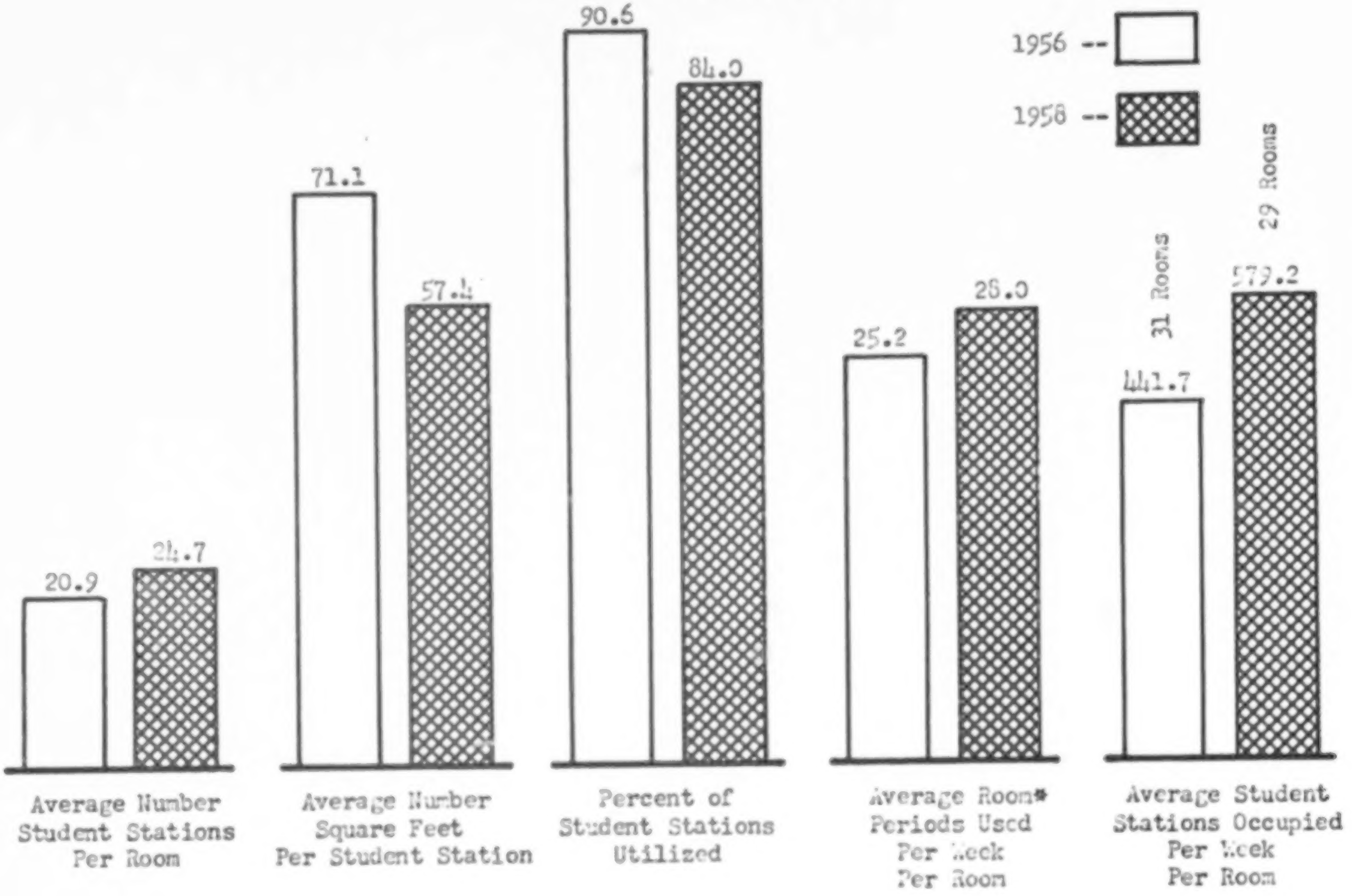


CHART 72

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT STOUT STATE COLLEGE

Fall 1956 and Fall 1958

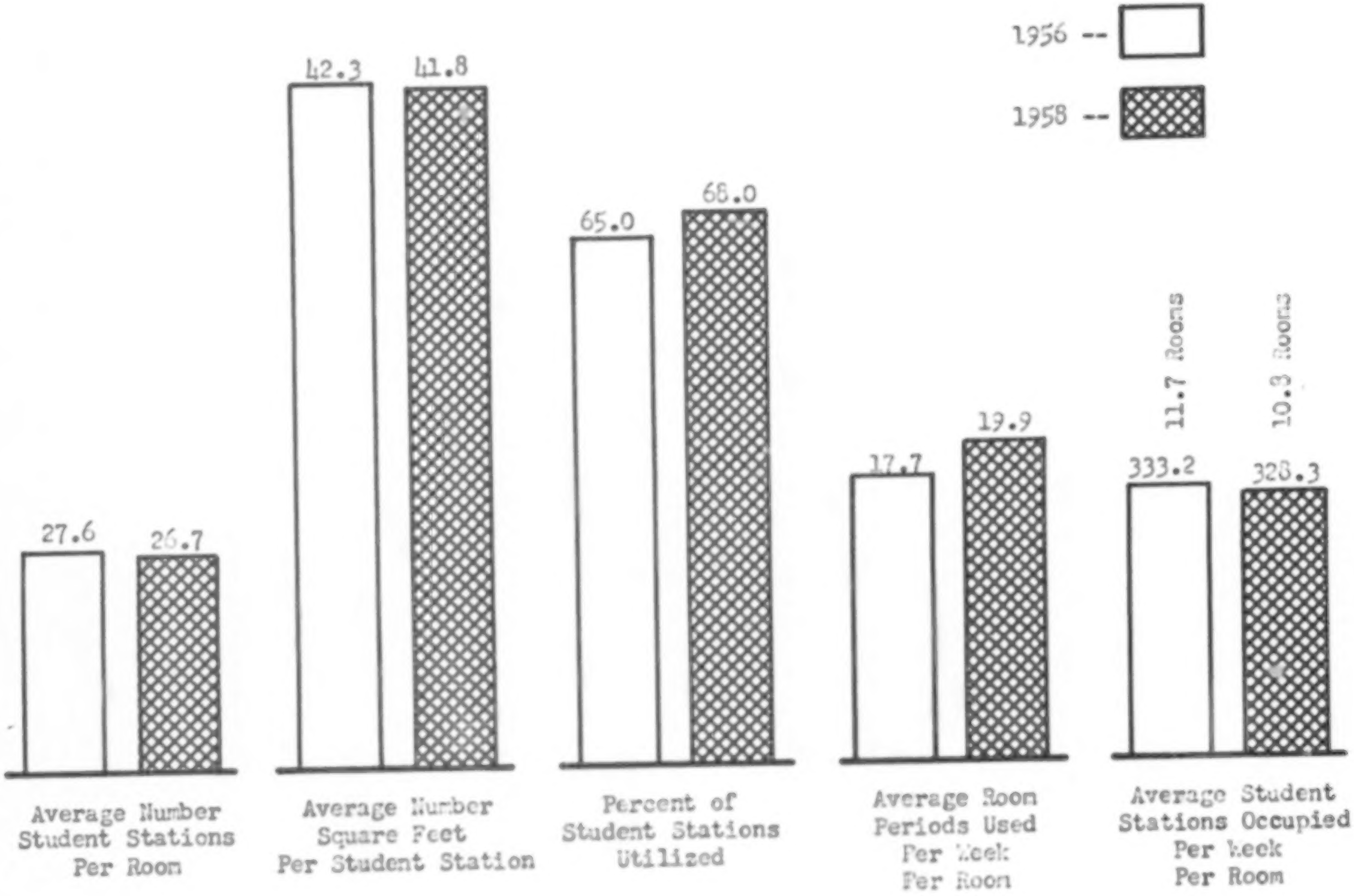


* This includes collegiate instruction only for 1956 and 1958. In addition, since Stout has no laboratory school, in 1958 six rooms were used an average of 6.7 room periods per week per room by an average of 125.8 students per room.

C H A R T 73

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT SUPERIOR STATE COLLEGE

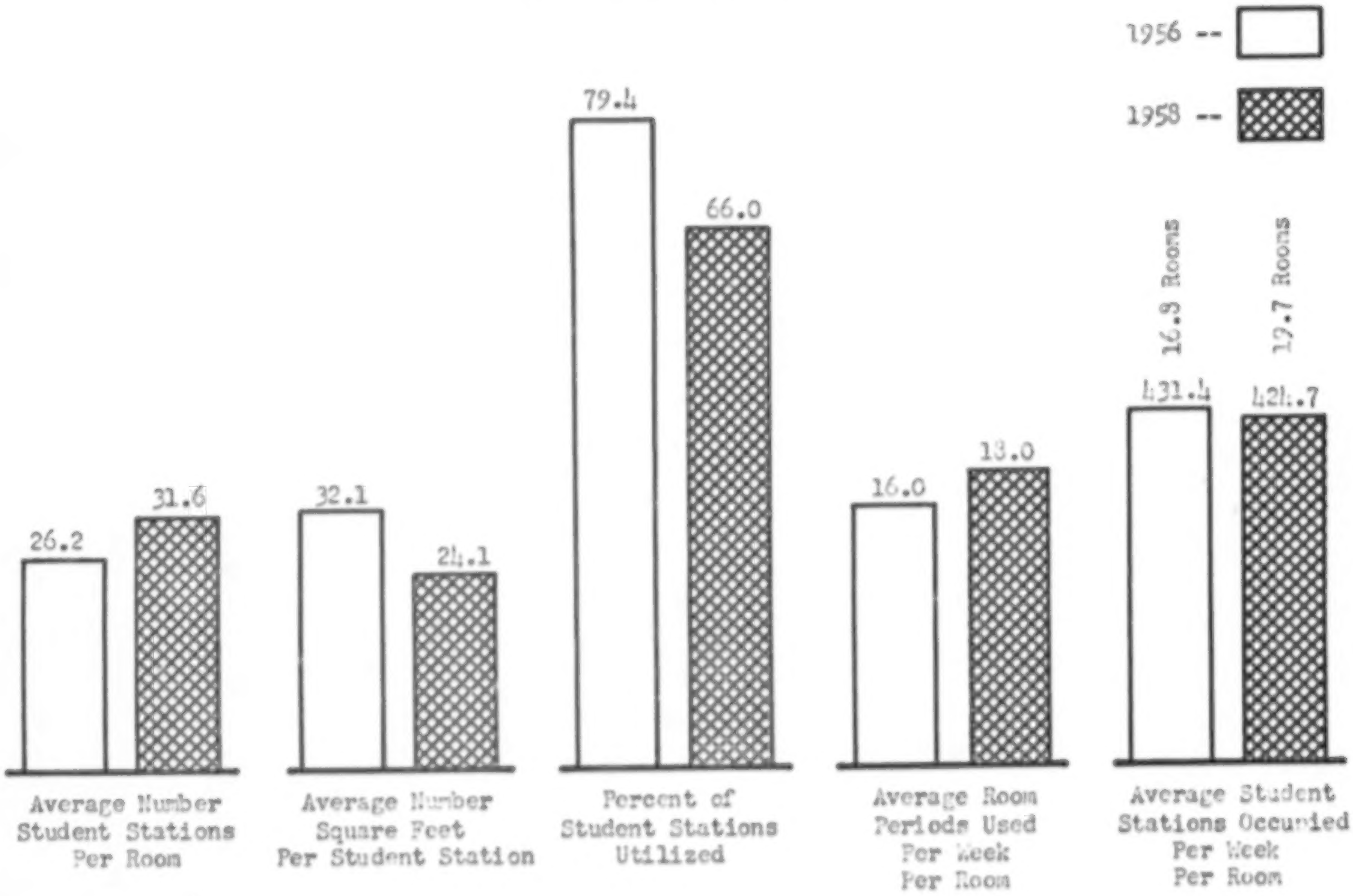
Fall 1956 and Fall 1958



C H A R T 74

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT WHITEWATER STATE COLLEGE

Fall 1956 and Fall 1958



C H A R T 75

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT WISCONSIN INSTITUTE OF TECHNOLOGY

Fall 1956 and Fall 1958

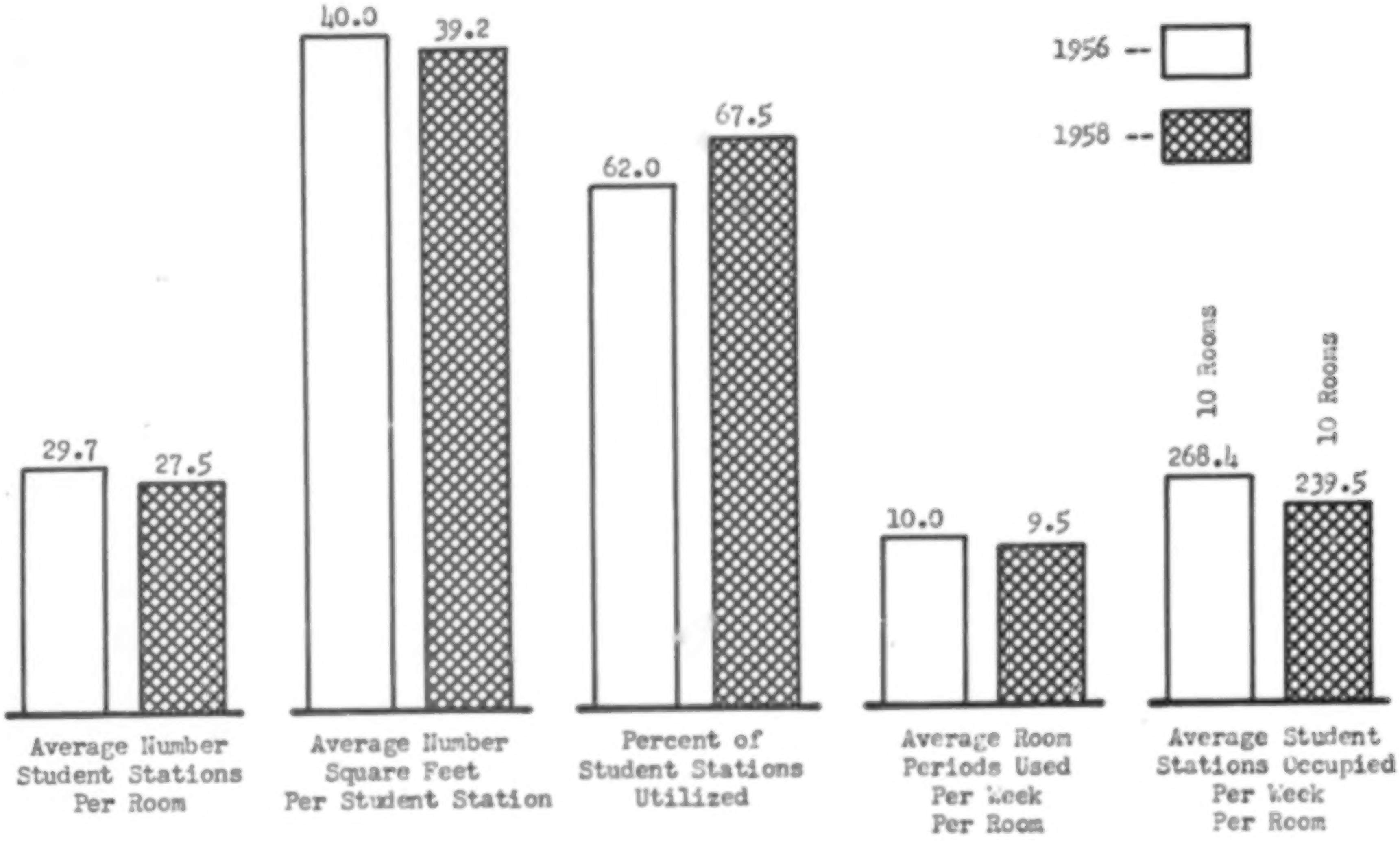
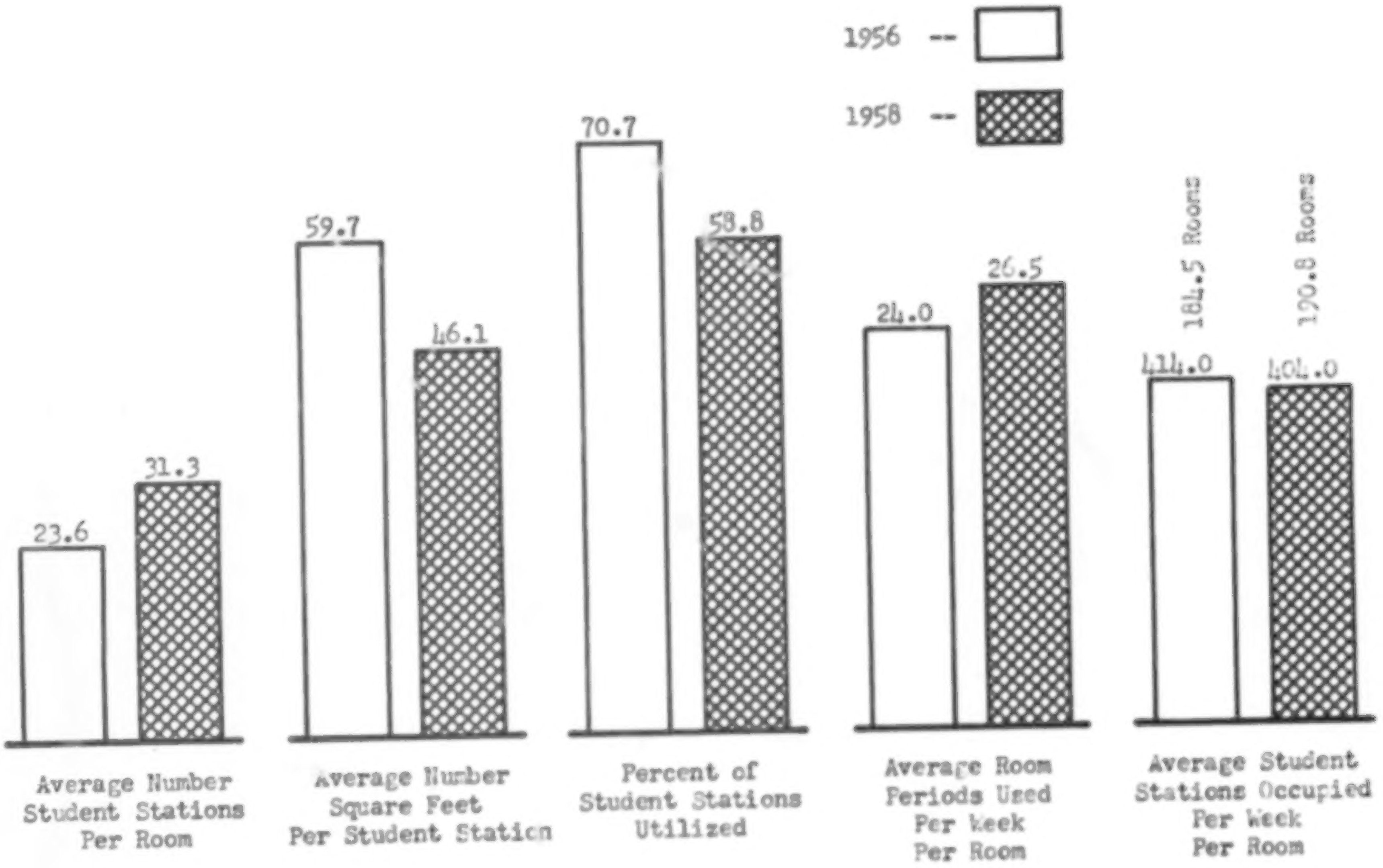


CHART 72

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT UNIVERSITY OF WISCONSIN, MADISON

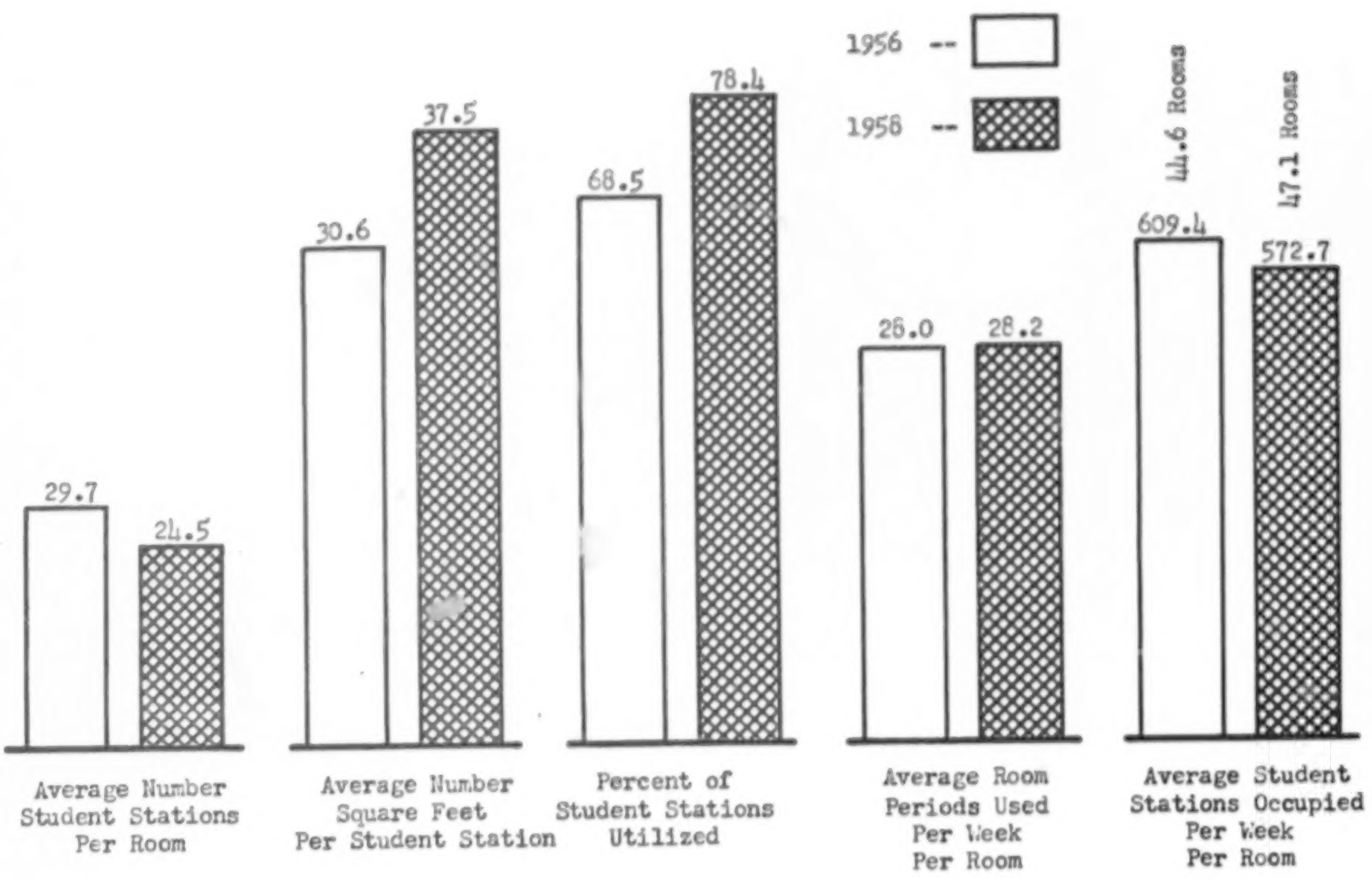
Fall 1956 and Fall 1958



C H A R T 77

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT UNIVERSITY OF WISCONSIN--MILWAUKEE (Combined Night and Day)

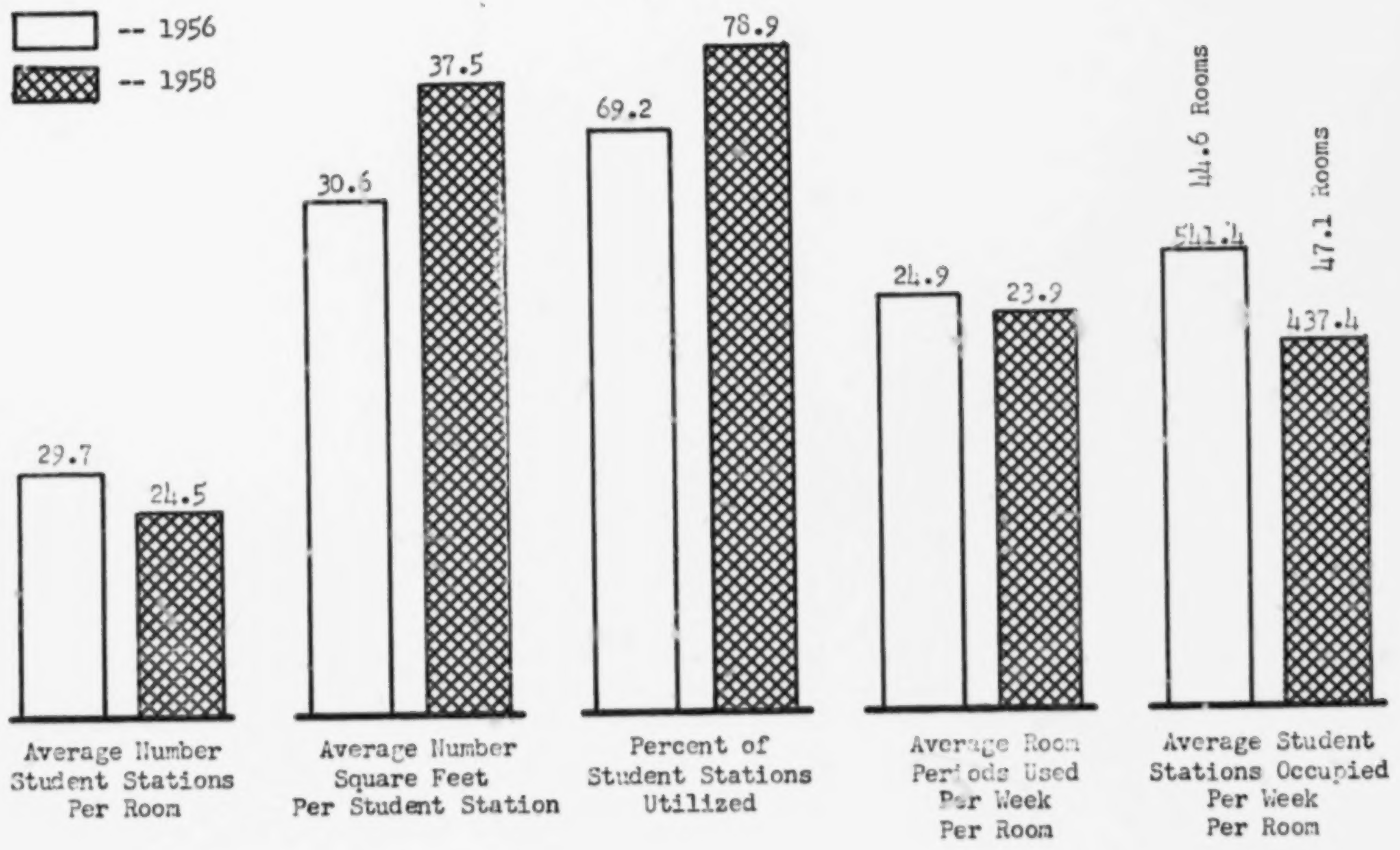
Fall 1956 and Fall 1958



C H A R T 77a

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT UNIVERSITY OF WISCONSIN--MILWAUKEE (DAY SCHEDULE*)

Fall 1956 and Fall 1958

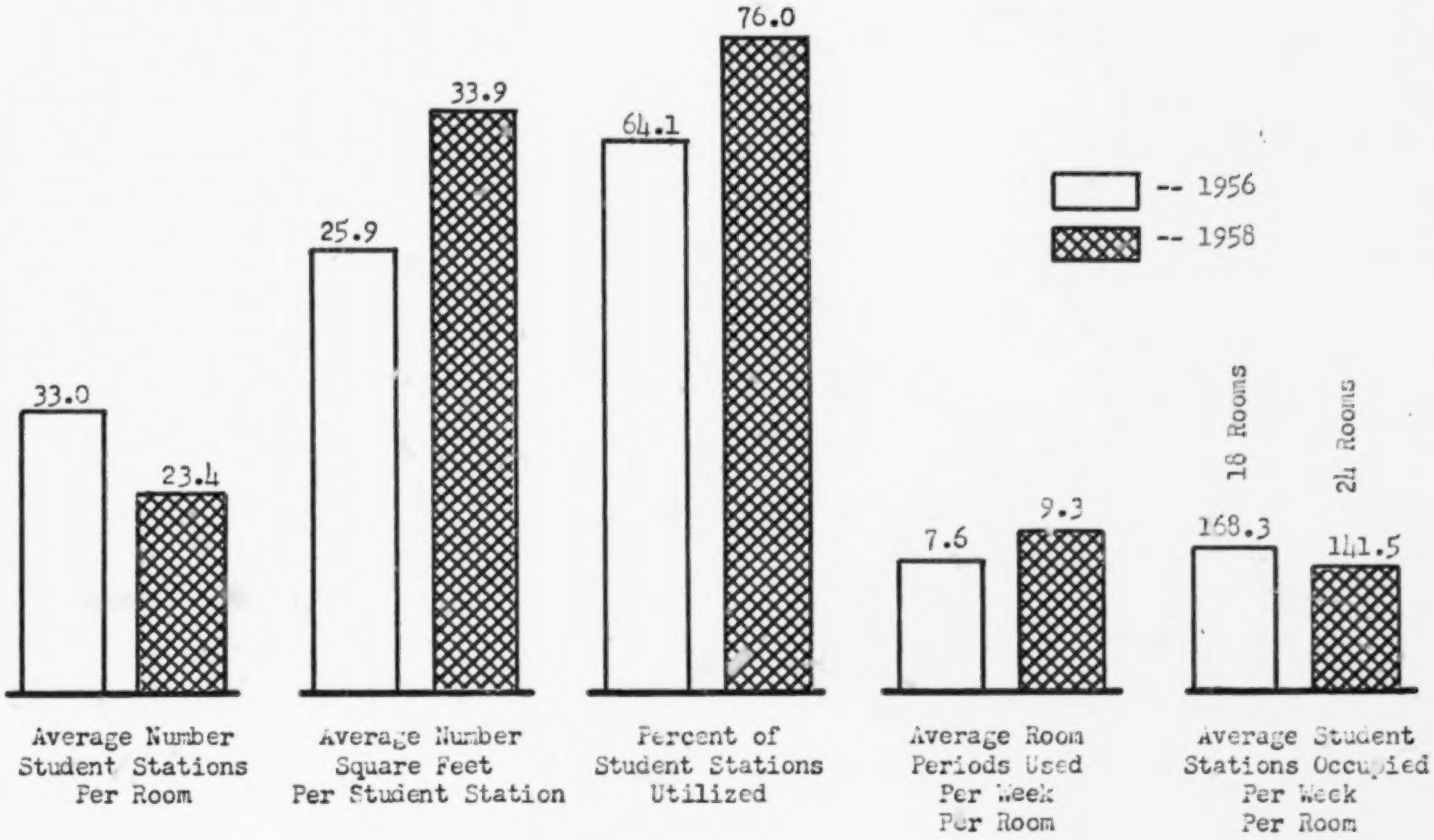


* For the purpose of this study the day schedule ends with the 4:30 - 5:30 period.

C H A R T 77b

A COMPARISON OF ASSOCIATED FACTORS CONCERNING UTILIZATION OF REGULARLY SCHEDULED LABORATORIES AT UNIVERSITY OF WISCONSIN--MILWAUKEE (NIGHT SCHEDULE*)

Fall 1956 and Fall 1958



* For the purpose of this study the evening schedule begins at 5:30 P. M.

OVERVIEW OF CLASSROOM AND LABORATORY
UTILIZATION -- Fall, 1958

1. A physical facilities survey is significant only when correlated with other relevant data, such as: enrollment trends, institutional objectives, quality of buildings, etc.

2. The square feet of classroom and laboratory space per student enrolled has decreased at all of Wisconsin's public institutions of high learning since the fall of 1956.

3. Curricula which involve the use of large laboratory equipment necessarily require more area per student station. Examples of this are certain laboratories of Agriculture, Engineering and Industrial Arts.

4. There has been a definite increase in the usage of classrooms and laboratories since the 1956 study. At the state colleges and the University of Wisconsin classrooms were used an average of 29.0 periods per week per room with 56.5% of the student stations utilized. Laboratories were used an average of 24.6 room periods with 65.9% student station utilization. In many instances the standards recommended in 1956 for room period use and student station utilization have been achieved or surpassed.

5. The laboratory utilization rate can continue to rise only to the degree that the quality of the educational program is not jeopardized. For example, there is a limit to the number of room periods which

laboratories can be used. It is imperative that time be allowed for preparation of demonstrations and experiments previous to the scheduled classes. Conversely, time must be allowed for the removal, cleaning and storage of equipment at the end of a class. The time allotted for passing between classes is insufficient for the preparation of demonstration materials. In addition to the regularly scheduled classes many students utilize the laboratory facilities during unscheduled periods to continue their work, develop proficiency and conduct research in a specific field of endeavor.

6. Certain curricula require highly specialized laboratories. Since these laboratories do not lend themselves to use in other areas, it is very improbable that a high rate of utilization can be attained. This is true unless the room can be used on an allied split function basis, such as instruction and research in a specific area.

7. Many instructional areas at the state colleges and the University are serving a split function use. For example, many institutions are using elementary and secondary laboratory school space for limited collegiate functions. Furthermore, the lack of sufficient faculty offices still necessitates the use of some classroom space for this function.

8. The size of a classroom or laboratory must be related to the subject, institutional enrollment, and the type of activity the room is to serve. For the most efficient use of classroom and laboratory space, based on the above proper distribution of small, medium and large rooms, coupled with careful planning and scheduling at each institution,

is necessary.

9. More students can be accommodated per week by increasing the number of student stations per room, increasing the average number of room periods used, and more fully utilizing the student stations available. However, a thorough knowledge of the effect of the associated utilization factors will enable each institution to make objective judgments as to the most economical means of accommodating more students.

10. It should be further noted that an institution having large rooms may presently show a low per cent of student station utilization for those areas. However, in view of soaring enrollments this may prove to be an advantage as the ensuing years may necessitate instruction of large groups in certain areas.

11. When optimum efficient utilization has been reached expansion of the physical plant is necessary. This must be determined in each specific area of instruction at each institution on the basis of need rather than overall plant expansion.

CHART 78

SUMMARY OF ASSIGNABLE SQUARE FEET FOR CLASSROOMS AND LABORATORIES AT WISCONSIN STATE COLLEGES AND UNIVERSITY OF WISCONSIN

Fall, 1958

Institution	Classrooms	Laboratories
State Colleges		
Eau Claire	18,491	14,674
La Crosse	21,027	9,527
Oshkosh	27,373	17,146
Platteville	20,176	32,352
River Falls	12,757	21,690
Stevens Point	19,416	23,048
Stout	13,607	46,863
Superior	18,370	11,584
Whitewater	16,033	15,883
Wis. Inst. Tech.	7,484	10,792
State College Total	174,734	203,559
University		
Madison	192,026	297,135
Milwaukee	56,773	39,081
University Total	248,799	336,216
All Institution	423,533	539,875